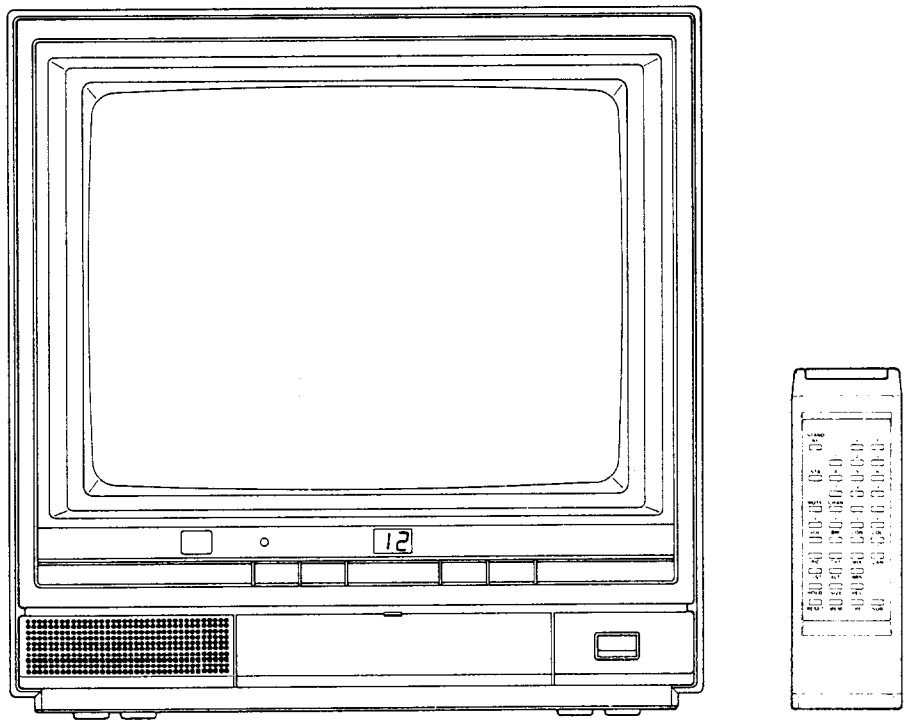
SERVICE MANUAL

NIKKAI TLG-100T

OSUMI CTV 1486 T

TAI CTV 1401 TEXT

14" Teletext Colour Television With
Full Function Remote Control



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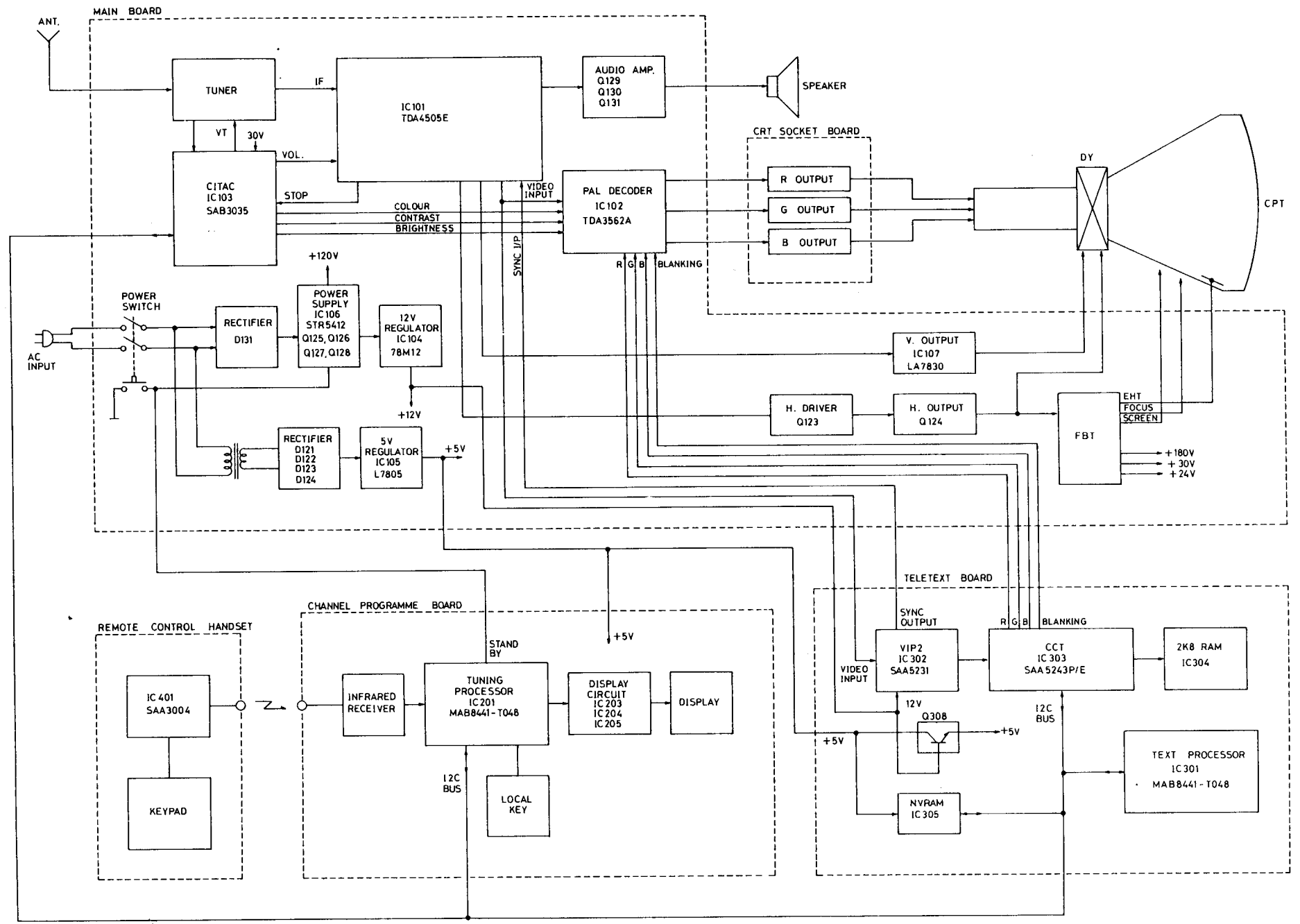
14" TELETEXT CTV BLOCK DIAGRAM



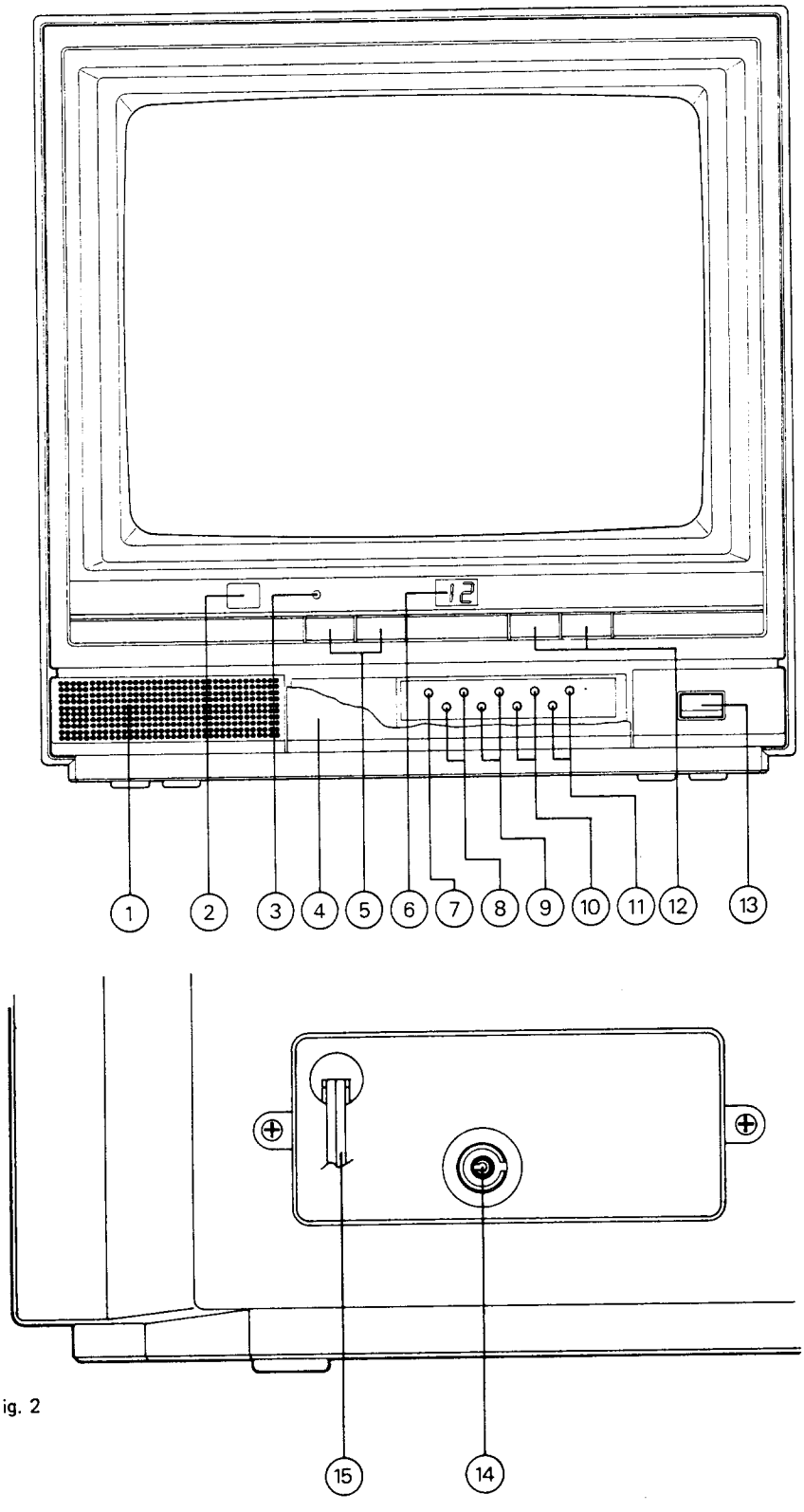
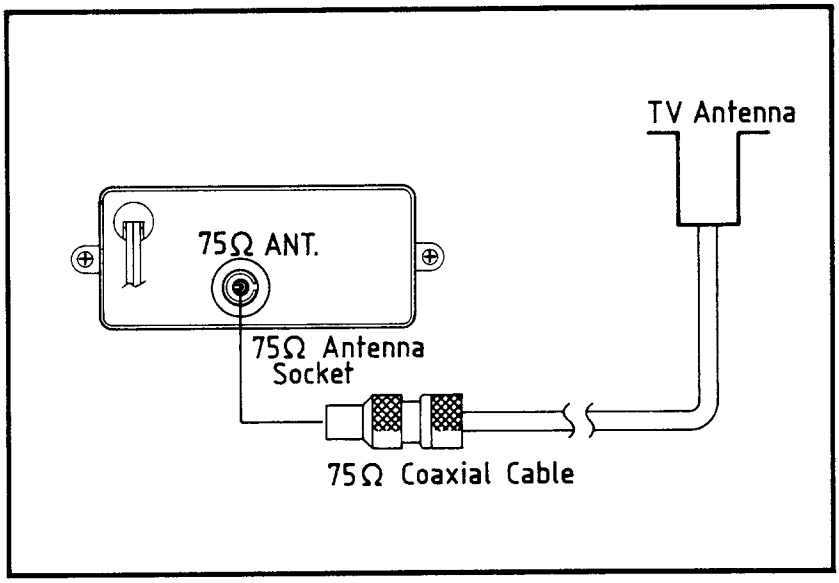
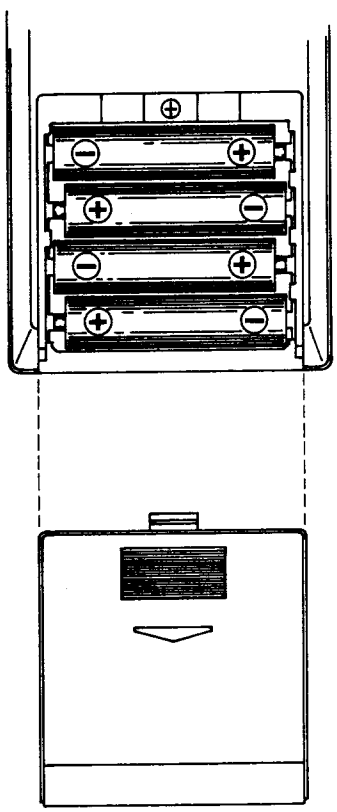
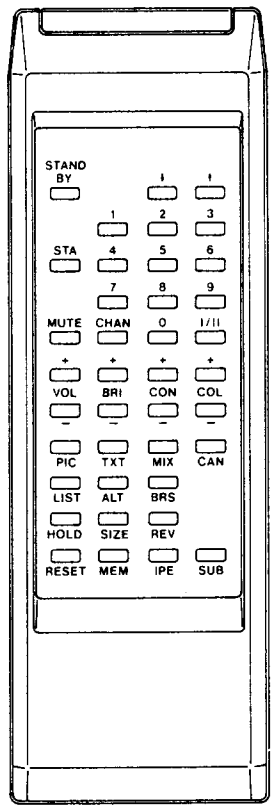


Fig. 2

1. SPEAKER
2. INFRARED SENSOR
3. STAND BY INDICATOR
4. CONTROL BOX COVER
5. PROGRAMME CONTROL
6. PROGRAMME INDICATOR
7. STORE BUTTON
8. TUNING CONTROL
9. COLOUR CONTROL
10. CONTRAST CONTROL
11. BRIGHTNESS CONTROL
12. VOLUME CONTROL
13. POWER ON/OFF BUTTON
14. ANTENNA TERMINAL
15. MAINS LEAD


TV Antenna
75Ω ANT.
75Ω Antenna
Socket
75Ω Coaxial Cable




STAND BY
STA
MUTE
CHAN
VOL
BRI
CON
COL
PIC
TXT
MIX
CAN
LIST
ALT
BRS
HOLD
SIZE
REV
RESET
MEM
IPE
SUB

V. IF ALIGNMENT

Preparation Step (See Fig.1)

1. Turn the RF AGC control fully Counterclockwise.
2. Supply AGC bias voltage to TP12.
3. Connect output lead of VIF sweep generator to tuner test point TP.
4. Connect lead of FROM DET between TP 5 and GROUND.
5. Connect damper resistor 10-ohm between TP-10 and TP-11.
6. Supply DC 12V to 12V line.

TESTING FIXTURE : Provide variable resisor 5K-ohm and connect as illustrated below.

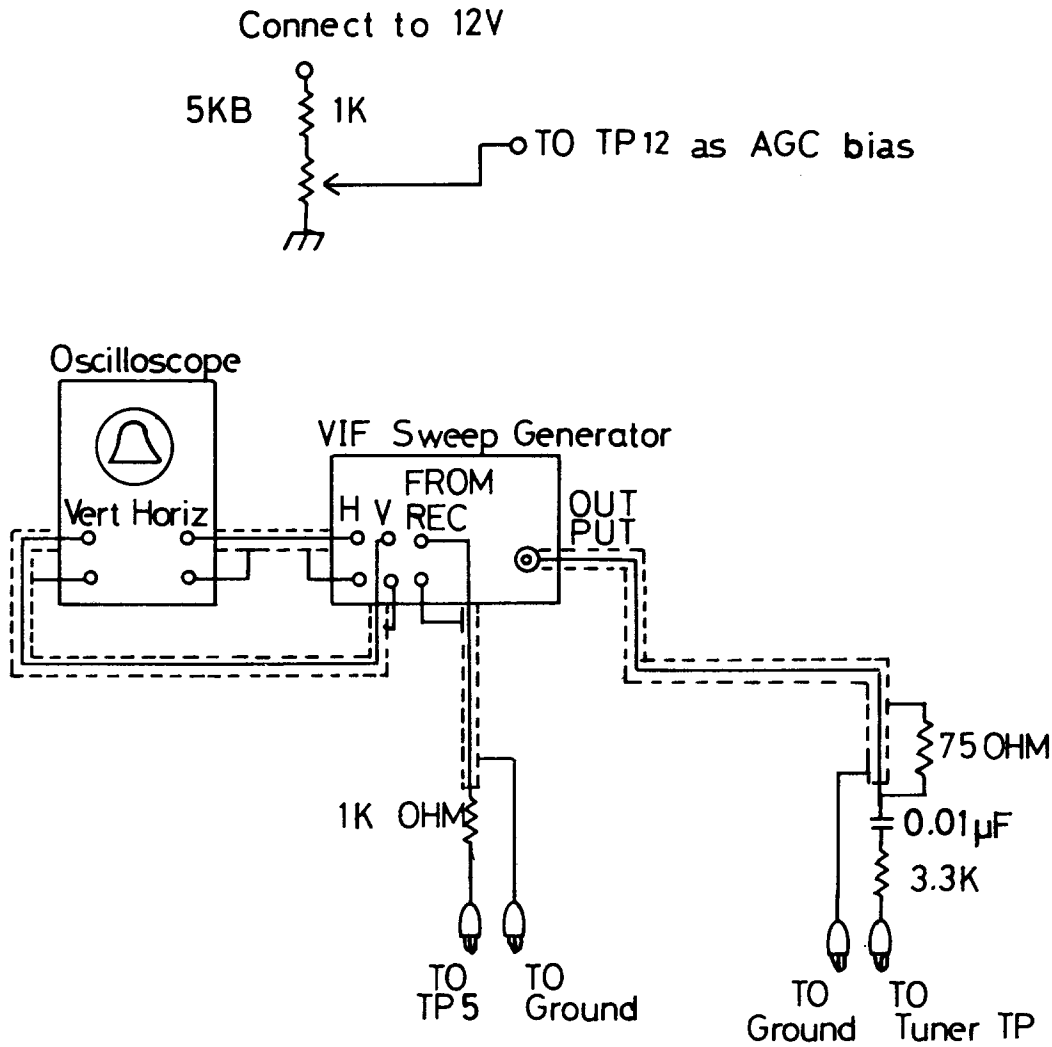


Fig 1

Alignment Step

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of sweep generator to achieve 1Vp-p output.
3. Increase the output level of sweep generator in 20dB.
4. Adjust AGC bias voltage to achieve 1Vp-p output on oscilloscope.
5. Adjust tuner converter coil to obtain the waveform as in Fig. 2

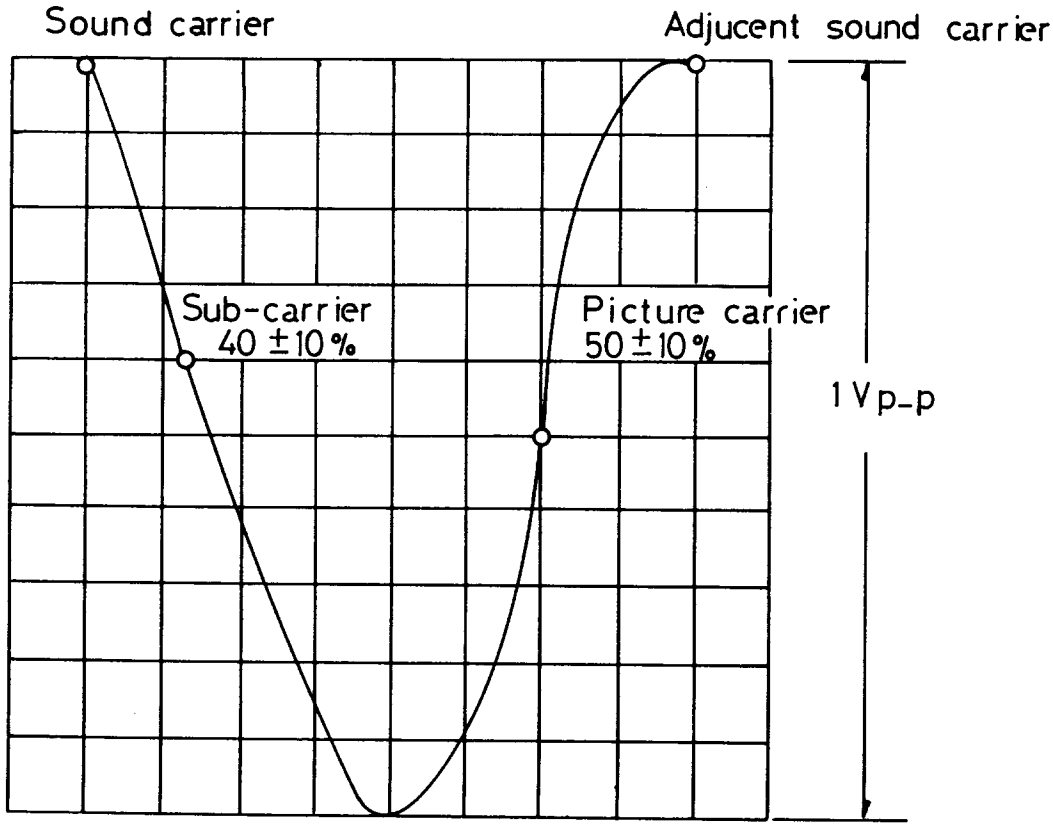


Fig. 2

AFT ALIGNMENT

Preparation Step (See Fig.3)

1. Turn the RF AGC control fully Counterclockwise.
2. Supply AGC bias voltage to TP12.
3. Connect output lead of VIF sweep generator to test point TP13 (see fig 3).
4. Connect lead of FROM DET between TP5 and GROUND.
5. Disconnect damper resistor 10-ohm between TP-10 and TP-11.
6. Supply DC 12V to 12V line.

TESTING FIXTURE: Provide variable resistor 5K-ohm and connect as illustrated below.

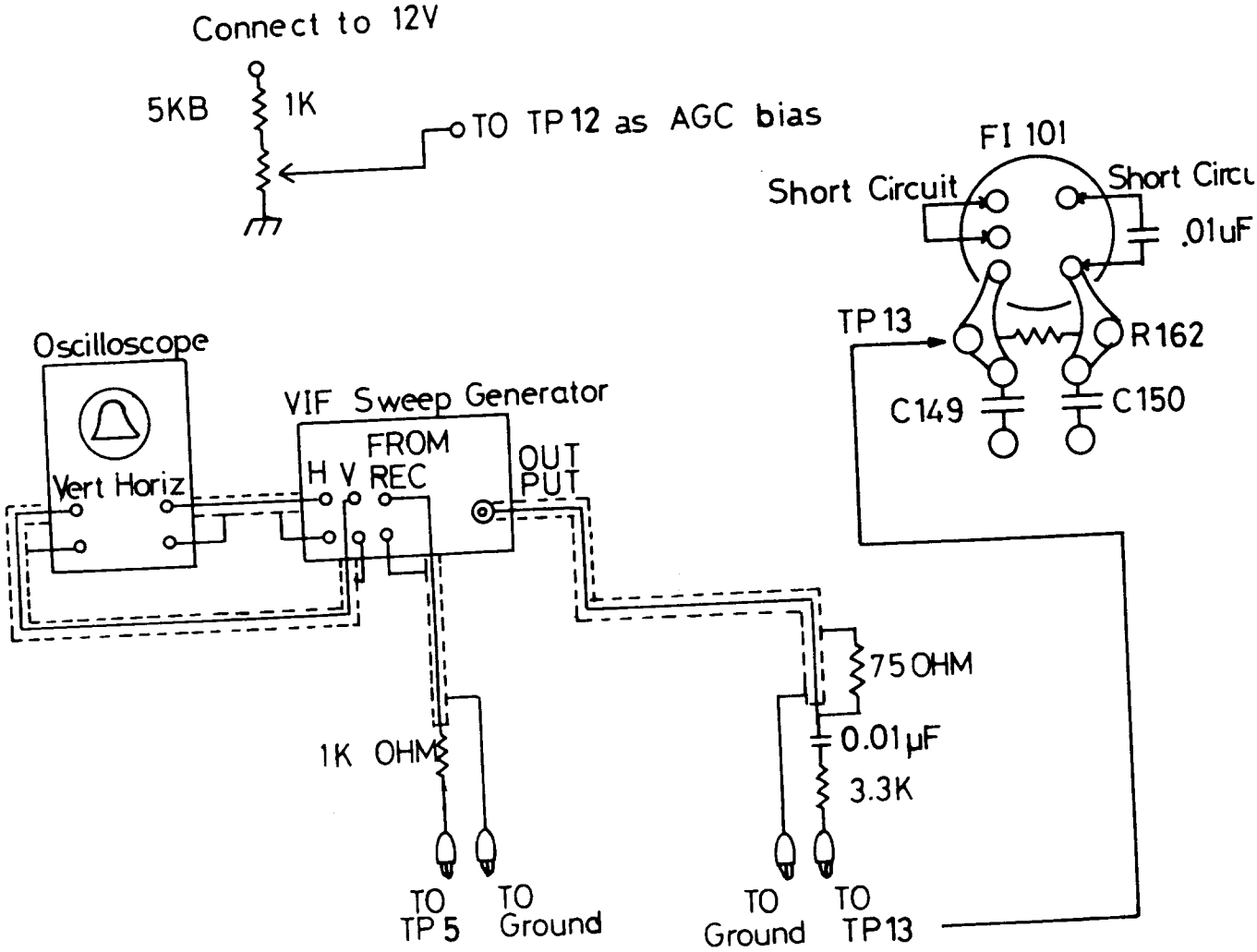


Fig.3

Alignment Step

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of sweep generator to achieve 0.5Vp-p output.
3. Increase the output level of sweep generator in 20dB.
4. Adjust AGC bias voltage to achieve 0.5Vp-p output on oscilloscope.
5. Adjust T102 for maximum waveform at marker of V.IF. frequence as in Fig.4.

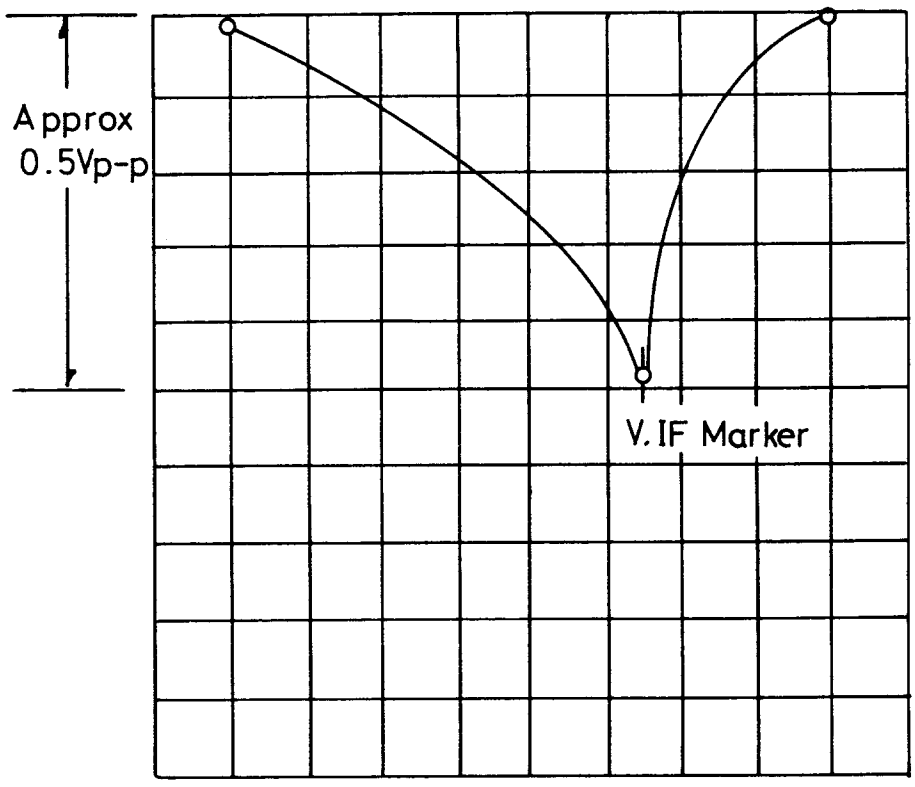


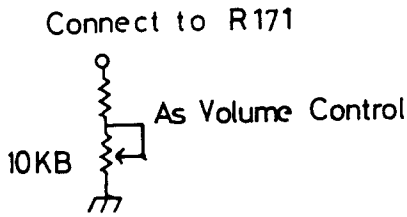
Fig.4

S.IF ALIGNMENT

Preparation step (See Fig.5)

1. Turn the volume control fully counterclockwise.
2. Connect output lead of SIF sweep generator between R173 and GROUND.
3. Connect lead of FROM DET between TP2 and GROUND.
4. Supply DC 12.0V to 12V line.
5. Short circuit the test point TP.16 and GROUND through 1K OHM RESISTOR

Testing Fixture: Provide variable resistor 10K-ohm and connect as illustrated below.



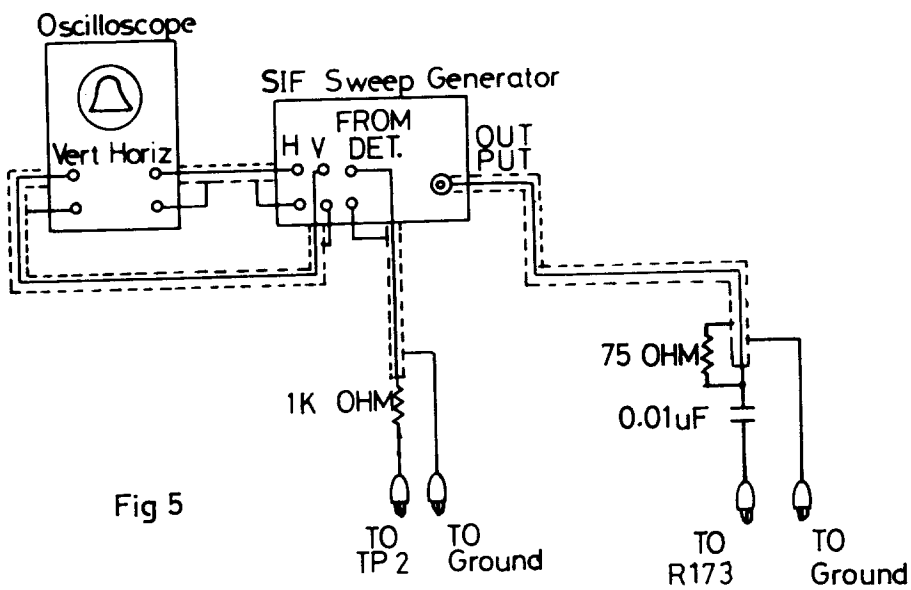


Fig 5

Alignment Step

1. Adjust volume control for suitable amplitude waveform under test.
2. Adjust T101 to get the best "S" curve with center marker of S.IF. frequence.
3. Confirm the waveform as in Fig 6.
4. Remove the connection after adjustment.

NOTE: Input level is -30 dB.

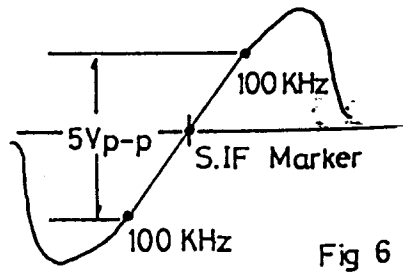


Fig 6

HORIZONTAL OSC ALIGNMENT.

1. Connect input lead of frequence counter between pin 26 of IC 101 and GROUND.
2. Disconnect the resistor R179 between pin 23 and 24. (IC101)
3. Short circuit the PIN 25 of IC101 to the 12V voltage.

ALIGNMENT STEP

1. Adjust VR102 to get the right frequence (15625Hz).

NOTE:
Re-connect the resistor R179 between pin 23 and 24 after adjustment.

ALIGNMENT CONDITION: INPUT SIGNAL STRENGTH.....80 dBu
POWER SUPPLY AC INPUT.....AC 220-240.

1. Alignment procedures
   The following adjustments are required for the decoder circuit:

   1. the reference oscillator
   2. the phase of the PAL-matrix.
   3. the amplitude of the PAL-matrix.

1.1. The reference oscillator
   For the alignment of the reference oscillator frequency the colour information on the screen can be used:

   1. apply a 10mv composite colour bar signal (PAL) to the input of antenna socket the decoder circuit.
   2. connect TP18 to the supply voltage 12V.
   3. short circuit TP14 and TP15 (U-and V-signal input).
   4. adjust VR105 for minimum rolling of the colours on the screen.
   5. remove the connections.

1.2. The phase of the PAL matrix

   1. set the contrast and brightness controls to normal position.
   2. set the color control to maximum position.
   3. connect the B-output signal at TP11 to oscilloscope and adjust T103 for minimum colour signal pairing of two consecutive lines on the screen of oscilloscope.

1.3. The amplitude of the PAL-matrix

1. remove the colour bar signal and apply a 10mv composite colour signal (PAL) with anti-PAL fields for example a test picture signal of the PM 5544.
2. set the contrast and brightness control to normal position.
3. set the color control to maximum position.
4. connect the B-output signal at TP17 to oscilloscope and adjust VR104 for minimum pairing on the anti-PAL fields on the screen of oscilloscope.

2. VERTICAL CIRCUIT ADJUSTMENT

2.1 Receive RETOMA pattern.
2.2 Adjust V-HEIGHT control (VR106) to obtain a normal picture.

3. HORIZONTAL CENTRE ADJUSTMENT

3.1 Receive Retoma pattarn.
3.2 Adjust H. centre control (VR 103) to obtain normal picture.

4. RF AGC ALIGNMENT

4.1. Receive the signal of VHF high channel.
4.2. Set the input signal strength is 60 +- 2dB.
4.3. Adjust RF AGC control (VR 101) to point where Noise is disappeared.
4.4. Increase the input signal in 2dB abd confirm AGC voltage

5. ALIGNMENT PROCEDURE FOR VIP2 SAA5231

5.1. Tuning the TV to a blank channel.
5.2. Connect a frequency counter to TP301.
5.3. Adjust the VC101 until the F6 frequency is 6010 KHz +-5KHz.

6. WHITE BALANCE ADJUSTMENT

6.1. Set the SCREEN control to 1/2 position.

6.2. Turn the red, green and blue BIAS controls (VR111 VR112 VR113) to middle position, and turn the DRIVE controls (VR114,VR115) to middle position.

6.3. Receive a black and white picture signal with manual tuning position.

6.4. Turn the SCREEN control to counter-clock wise, and TURN VR111, VR112 and VR113 to minimum position.

6.5. Shorted circuit the test point TP6 and 7.

6.6. Slowly turn the SCREEN control to clockwise. point where one of the horizontal line just illuminates.

6.7. Adjust the BIAS control volume which it's color appeared the first on the horizontal line corresponded to the color just appeared on the CPT, leaves as it is, and need no futher adjustment for control. Turn the rest of BIAS controls towards clockwise to achieve white horizontal line on the CPT.

6.8. Turn the screen central to counter-clock wise point where the white horizontal line just disappeared.

6.9. Release the test point of TP6 and 7 and turn BRIGHTNESS control to middle position.

6.10. Adjust green and blue DRIVE controls (VR114,VR115) to obtain a uniform white raster.

6.11. Check the black and white picture detail for proper black and white condition (no coloration) from lowlight to highlight and all brightness level for porper tracking. Proper tracking at all brightness level can be obtained when the SCREEN control, BIAS controls abd DRIVE controls are properly adjusted.
If the results are unsatisfactory, repeat from the beginning.

7. FOCUS ADJUSTMENT

7.1. Set CONTRAST control to maximum position and BRIGHTNESS control to middle position.

7.2. Adjust FOCUS control on the FBT to obtain a sharpest and clearest picture on the CPT.

8. CONVERGENCE ADJUSTMENT (SEE FIG.7)

8.1. Receive a dotted pattern.

8.2. Unfix the conveergence magnet clamper and align red with blue dots at the center of the screen by rotating (R,B) static convergence magnets.

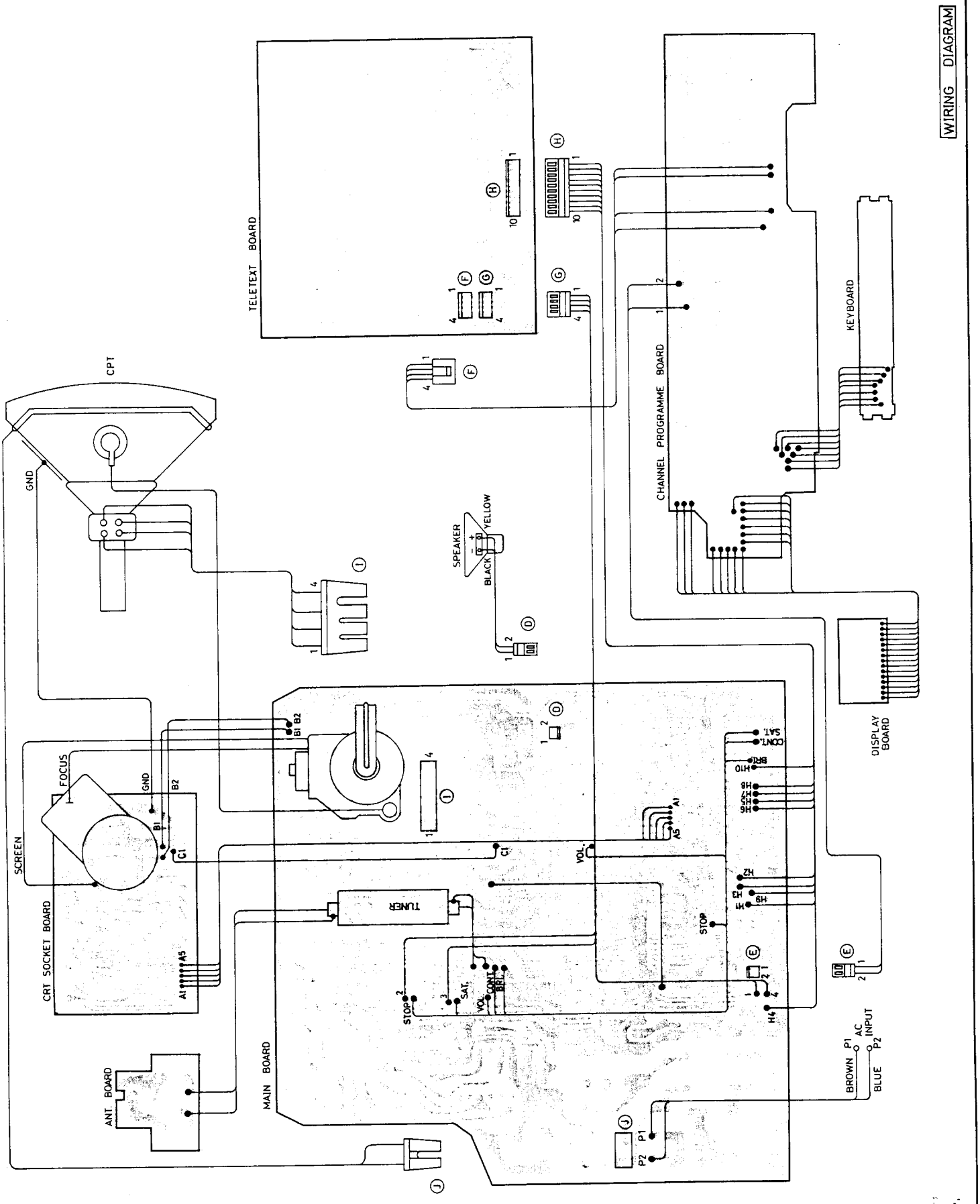
8.3. Align Red / Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet.

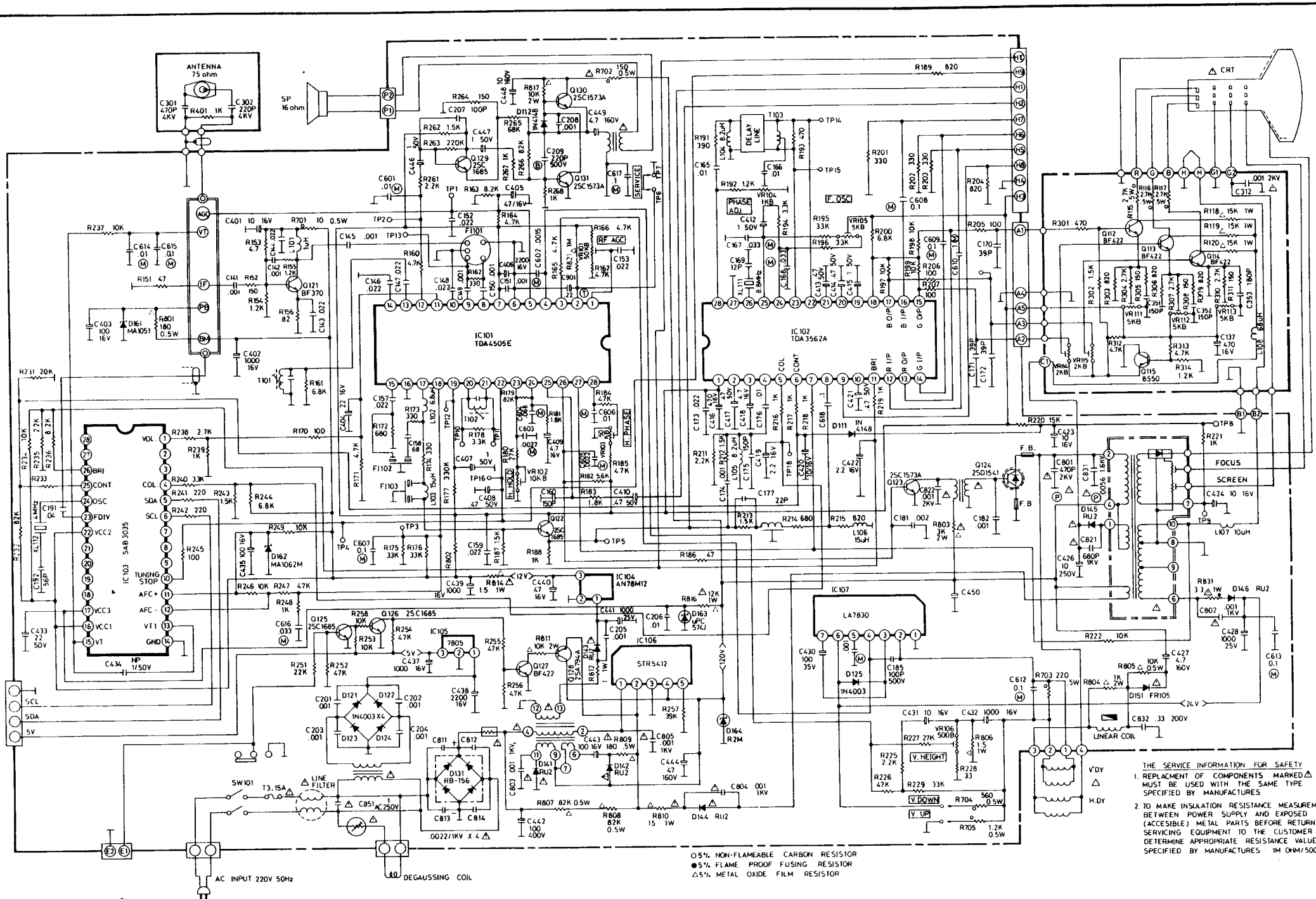
8.4. Fix the convergence magnets by turning the clamper.

8.5. Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good overall convergence.

8.6. Fix the deflection yoke by wedges.

8.7. If purity error is found, follow 'PURITY ADJUSTMENT' instructions.

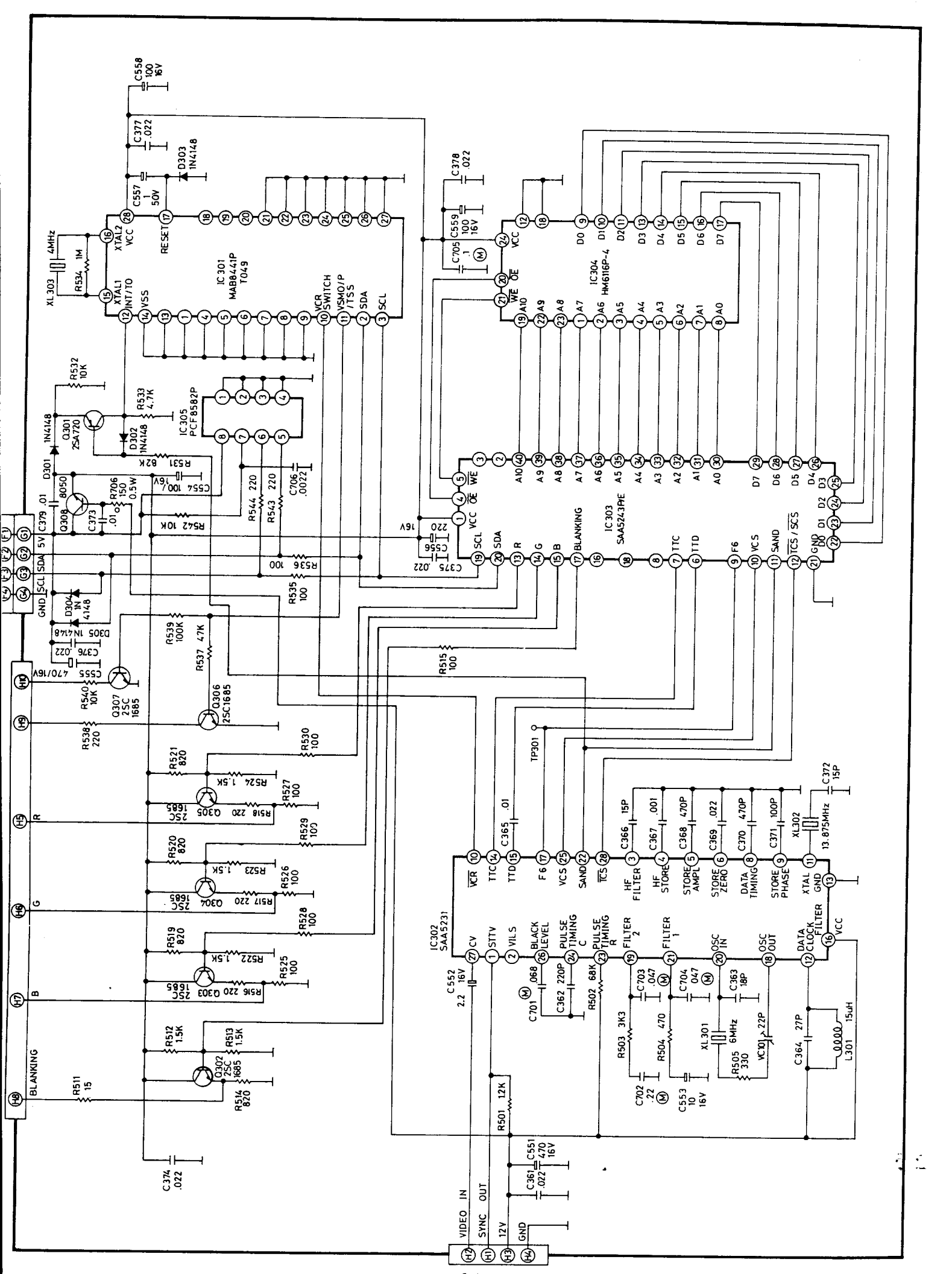

WIRING DIAGRAM
TELETEXT BOARD
CPT
GND
SPEAKER
YELLOW
BLACK
CHANNEL PROGRAMME BOARD
KEYBOARD
DISPLAY BOARD
SCREEN
FOCUS
GND
B1 B2
C1
A1 A5
CRT SOCKET BOARD
TUNER
MAIN BOARD
ANT. BOARD
VOL.
STOP
SAT.
CONT.
BRI.
BROWN P1
BLUE P2
AC INPUT



THE SERVICE INFORMATION FOR SAFETY

1. REPLACMENT OF COMPONENTS MARKED △ MUST BE USED WITH THE SAME TYPE SPECIFIED BY MANUFACTURES.
2. TO MAKE INSULATION RESISTANCE MEASUREMENT BETWEEN POWER SUPPLY AND EXPOSED (ACCESIBLE) METAL PARTS BEFORE RETURNING SERVICING EQUIPMENT TO THE CUSTOMER TO DETERMINE APPROPRIATE RESISTANCE VALUE SPECIFIED BY MANUFACTURES 1M OHM/500V DC

○ 5% NON-FLAMEABLE CARBON RESISTOR
● 5% FLAME PROOF FUSING RESISTOR
△ 5% METAL OXIDE FILM RESISTOR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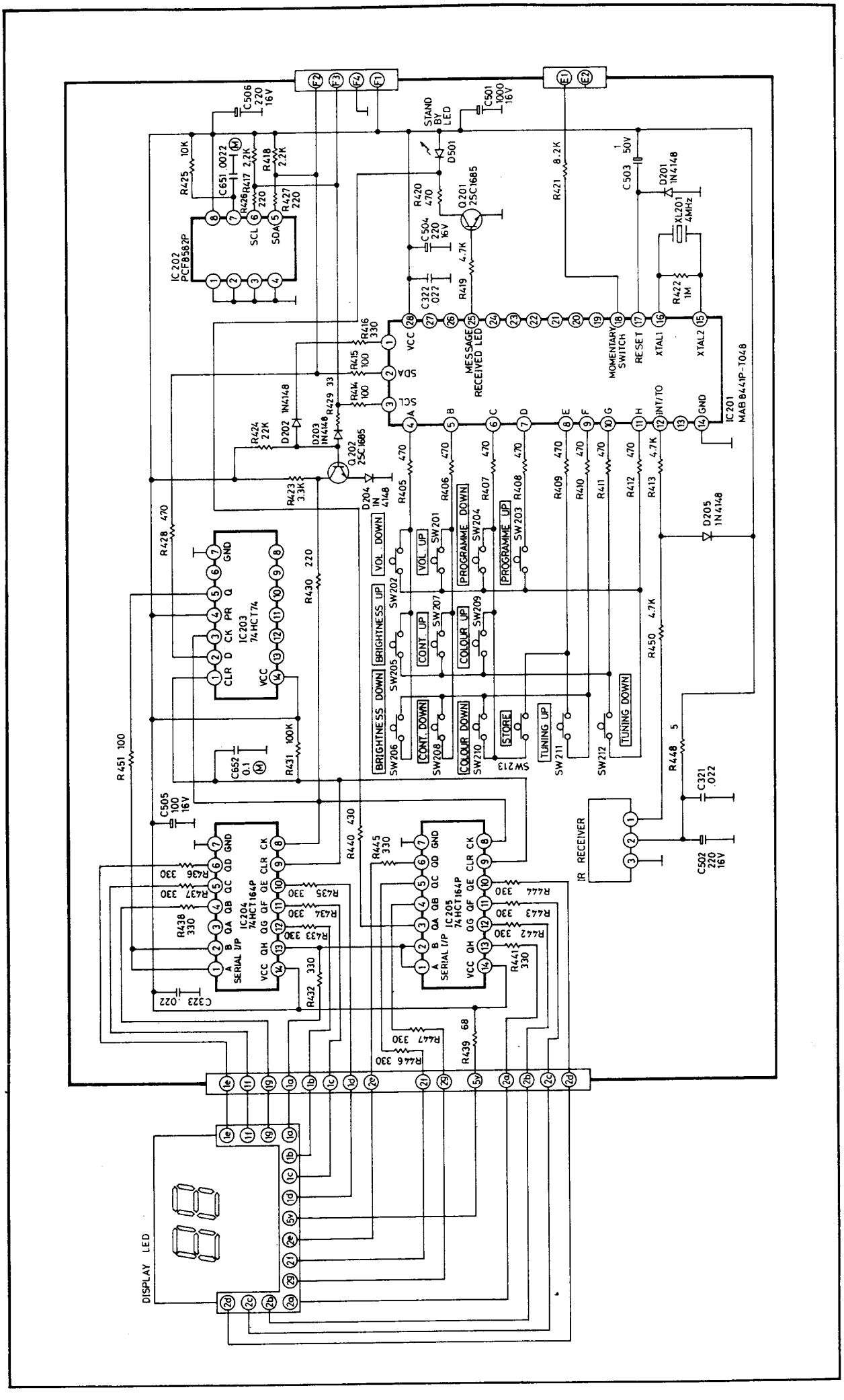
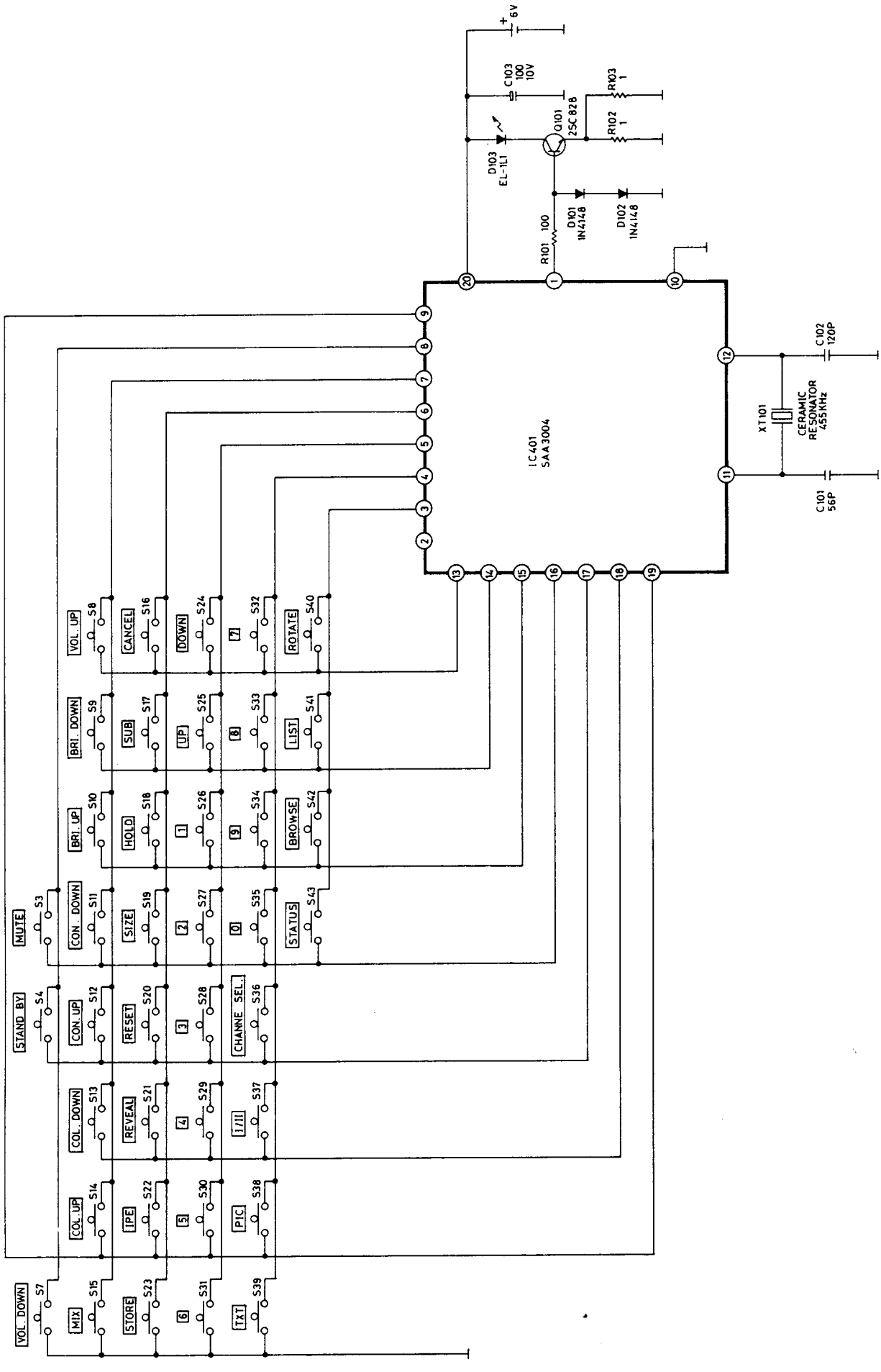
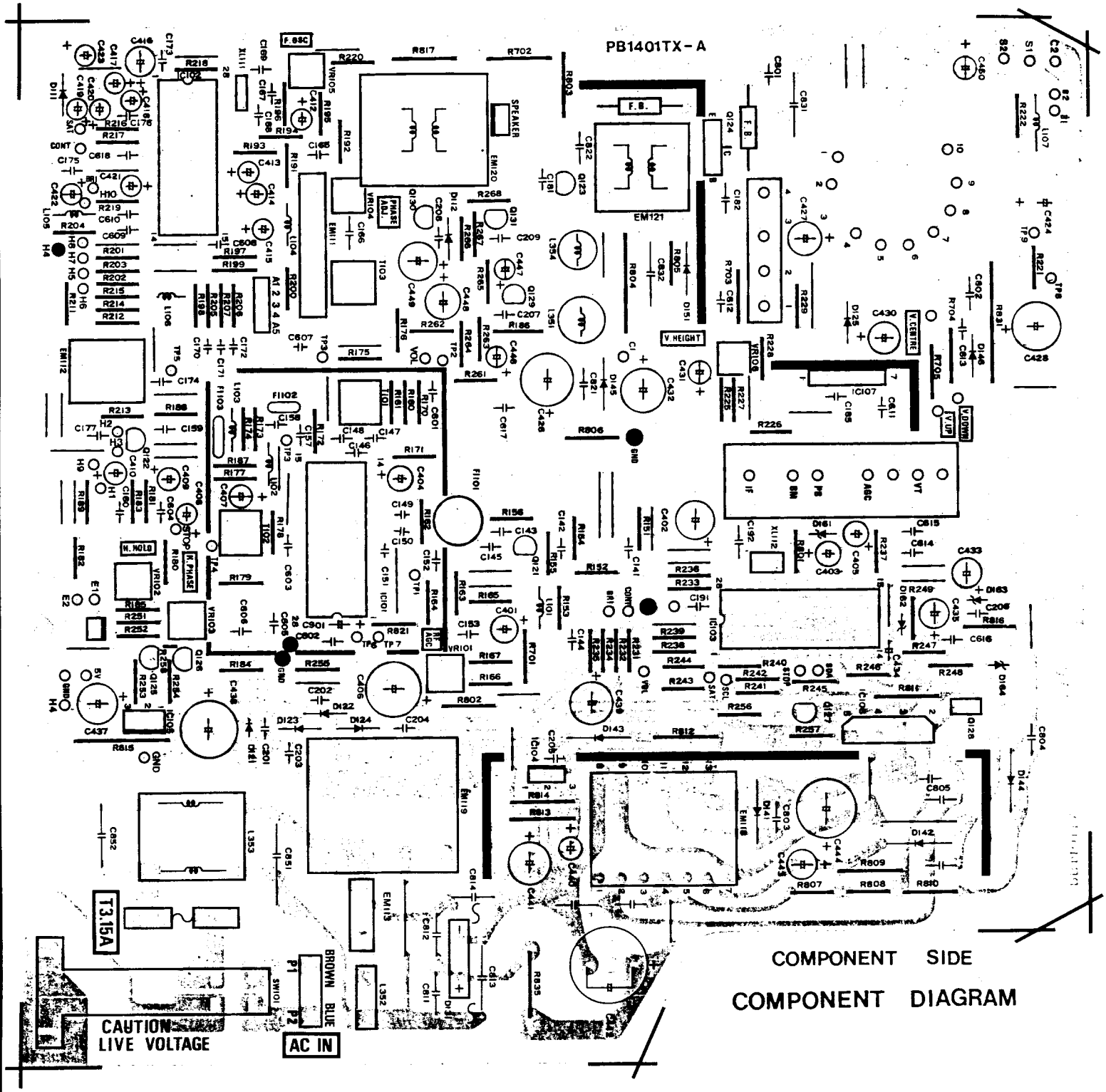
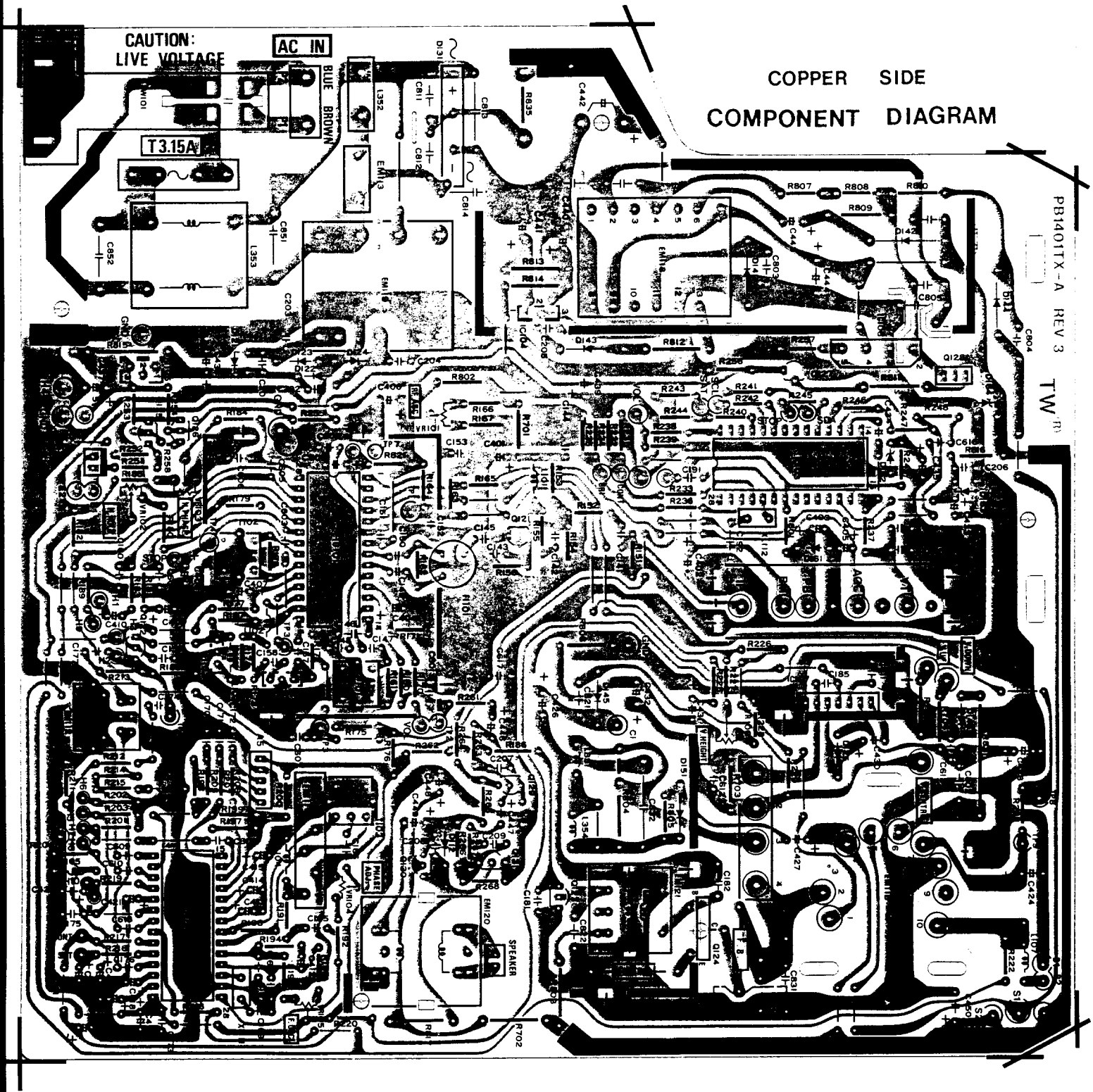
IC 302 SAA5231
IC 303 SAA5243PE
IC 304 HM6116P-4
IC 305 PCF8582P
XL303 4MHz
XL302 13.875MHz
XL301 6MHz
L301 15uH
TP301
VIDEO IN
SYNC OUT
12V
GND
BLANKING
R
G
B

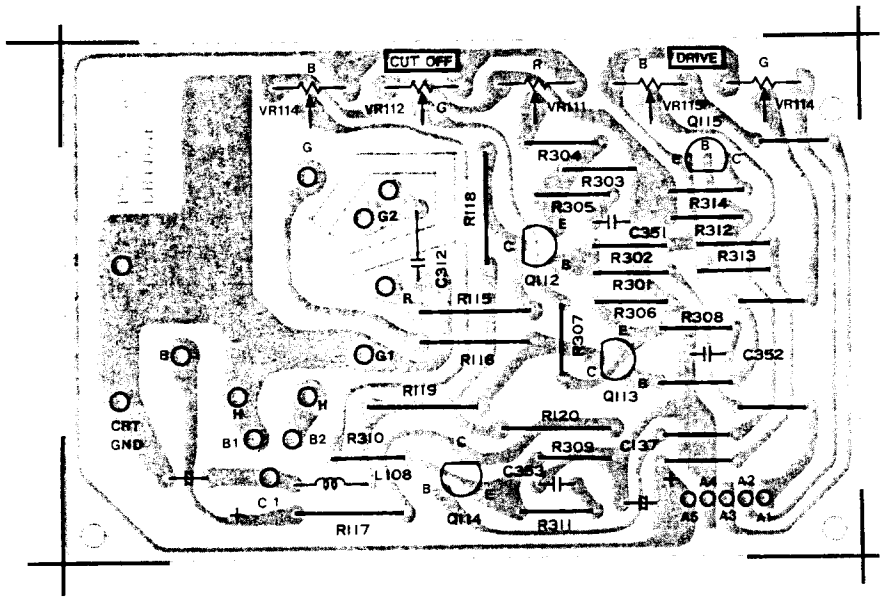

IC201 MAB 8441P-T048
IC202 PCF8582P
IC203 74HCT74
IC204 74HCT164P
IC205 74HCT164P
Q201 2SC1685
Q202 2SC1685
D201 1N4148
D202 1N4148
D203 1N4148
D204 IN 4148
D205 1N4148
D501
STAND BY LED
MESSAGE RECEIVED LED
MOMENTARY SWITCH
RESET
XTAL1
XTAL2
INT/TO
GND
VCC
SDA
SCL
IR RECEIVER
DISPLAY LED
VOL. UP
VOL. DOWN
PROGRAMME UP
PROGRAMME DOWN
CONT. UP
CONT. DOWN
BRIGHTNESS UP
BRIGHTNESS DOWN
COLOUR UP
COLOUR DOWN
TUNING UP
TUNING DOWN
STORE
SW201
SW202
SW203
SW204
SW205
SW206
SW207
SW208
SW209
SW210
SW211
SW212
SW213
R405 470
R406 470
R407 470
R408 470
R409 470
R410 470
R411 470
R412 470
R413 4.7K
R419 4.7K
R420 470
R421 8.2K
R422 1M
R423 3.3K
R424 22K
R425 10K
R426 2.2K
R427 220
R428 470
R429 33
R430 220
R431 100K
R432 330
R438 330
R439 68
R440 430
R441 330
R442 330
R443 330
R444 330
R445 330
R446 330
R447 330
R448 5
R450 4.7K
R451 100
R415 100
R416 330
R417 220
R418 2.2K
C322 .022
C321 .022
C323 .022
C501 1000 16V
C502 220 16V
C503 1 50V
C504 220 16V
C505 100 16V
C506 220 16V
C651 0022
C652 0.1
XL201 4MHz

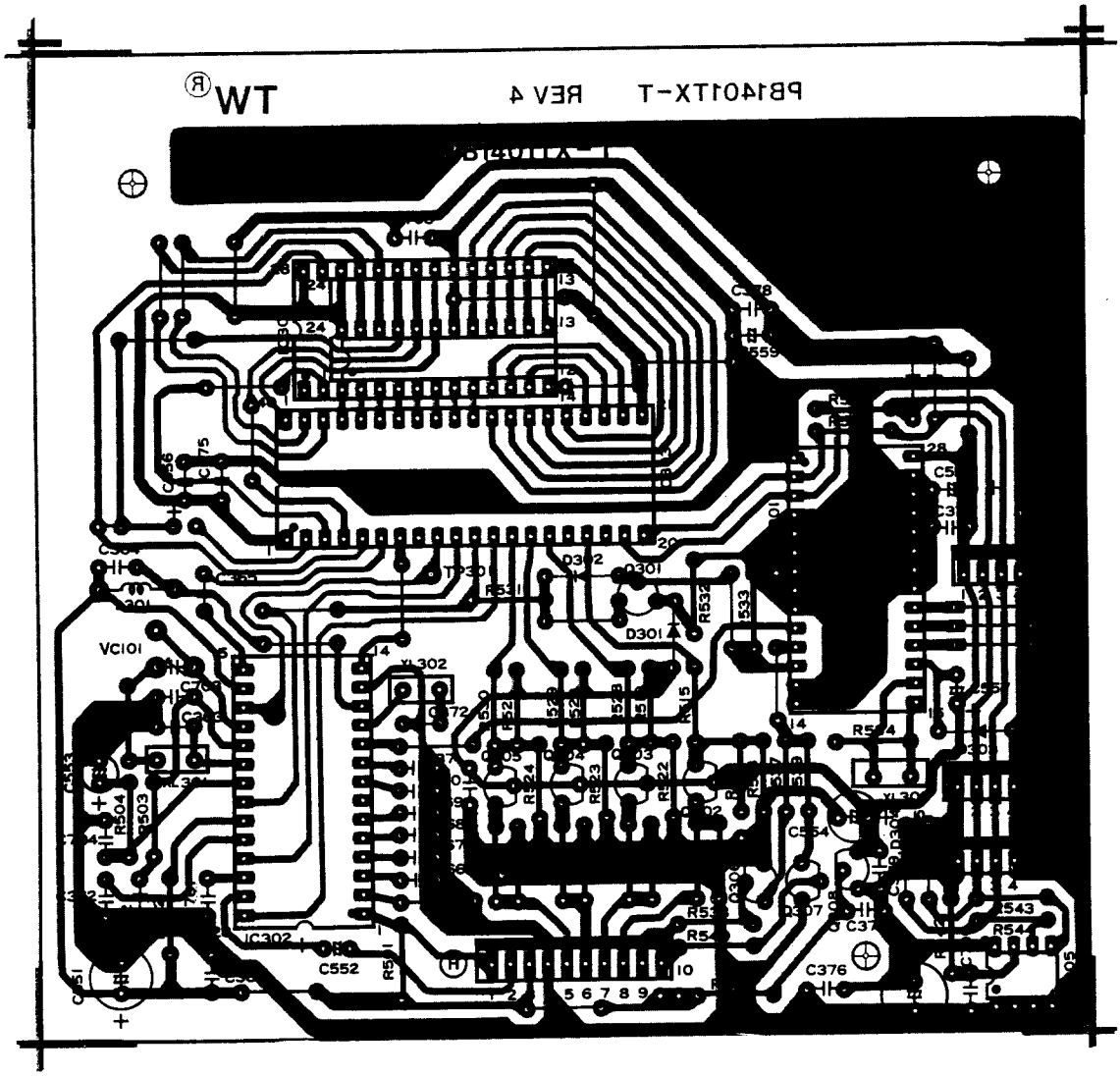

+ 6V
C103 100 10V
R103 1
R102 1
Q101 2SC 828
D103 EL-1L1
D101 1N4148
D102 1N4148
R101 100
IC401 SAA3004
XT101
CERAMIC RESONATOR 455KHz
C102 120P
C101 56P
VOL. UP
CANCEL
DOWN
7
ROTATE
BRI. DOWN
SUB
UP
8
LIST
BRI. UP
HOLD
1
9
BROWSE
CON. DOWN
SIZE
2
0
STATUS
MUTE
STAND BY
CON. UP
RESET
3
CHANNE SEL.
COL. DOWN
REVEAL
4
I/II
COL. UP
IPE
5
PIC
VOL. DOWN
MIX
STORE
6
TXT


PB1401TX-A
T3.15A
CAUTION
LIVE VOLTAGE
BROWN BLUE
P1
P2
AC IN
COMPONENT SIDE
COMPONENT DIAGRAM

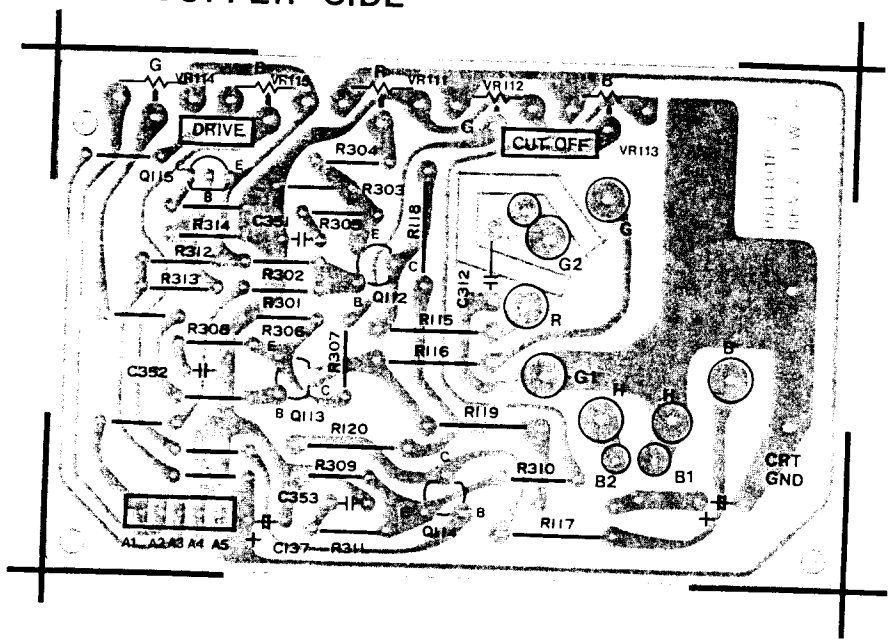

COPPER SIDE
COMPONENT DIAGRAM
CAUTION:
LIVE VOLTAGE
AC IN
BLUE BROWN
T3.15A
PB1401TX-A REV 3
TW
SPEAKER

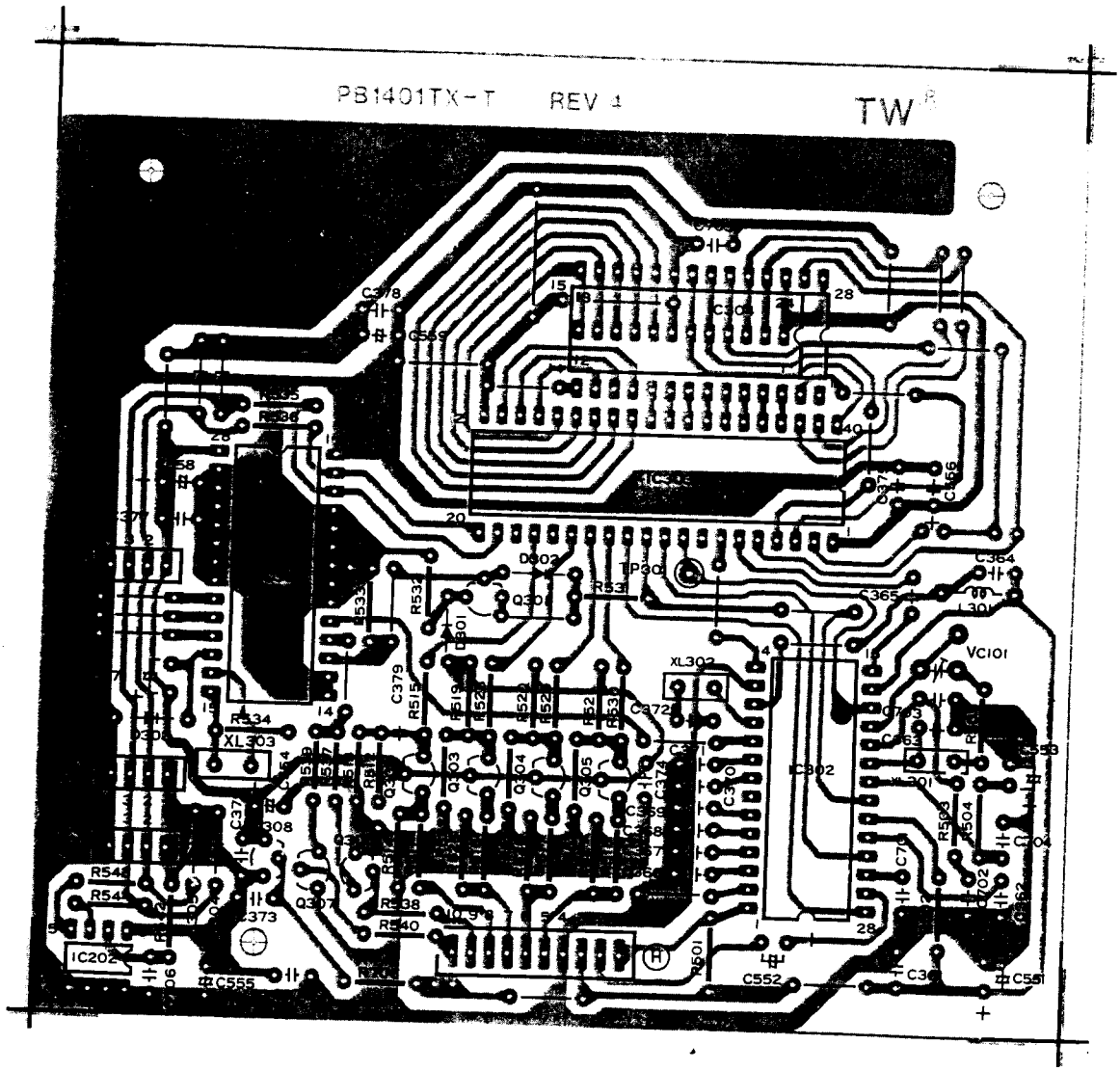
COMPONENT SIDE



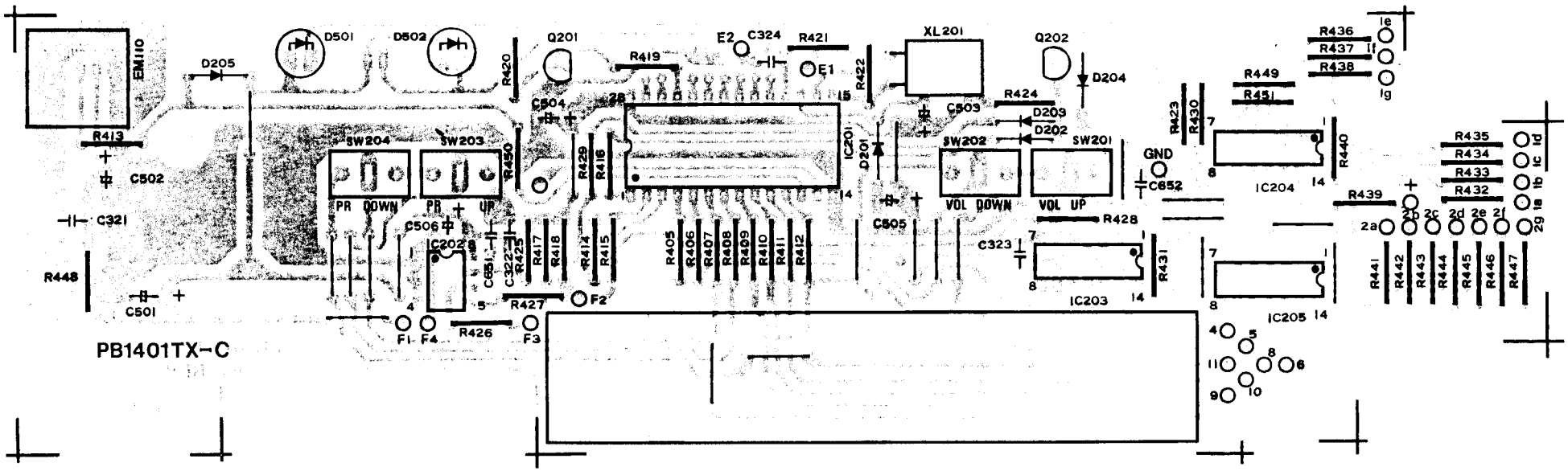


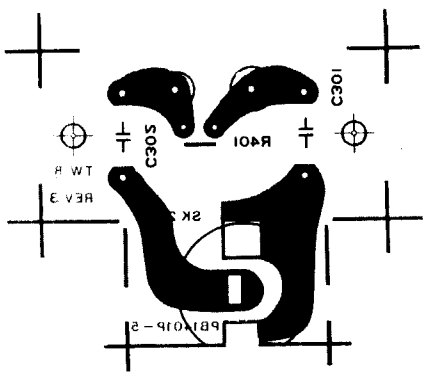
COPPER SIDE

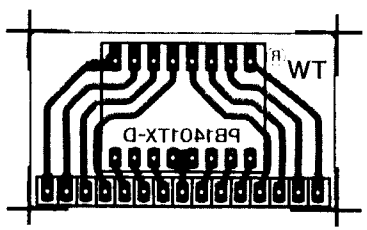

DRIVE
CUT OFF
VR111
VR112
VR113
VR114
VR115
R304
R303
R305
R118
R314
R312
R313
R302
R301
R308
R306
R307
R115
R116
R119
R120
R309
R310
R117
C352
C353
C312
Q115
Q112
Q113
Q114
G1
G2
B1
B2
CRT
GND
A1 A2 A3 A4 A5
C137
R311

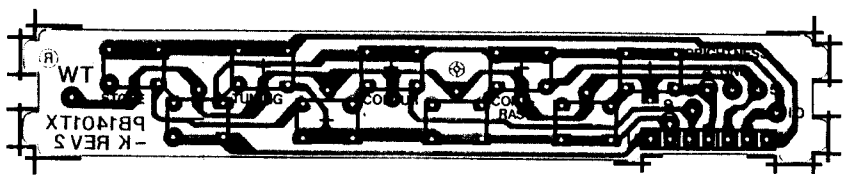

PB1401TX-T REV 1
TW
IC302
IC303
IC202
XL302
XL303
TP301
VC101
C552
C555
C561

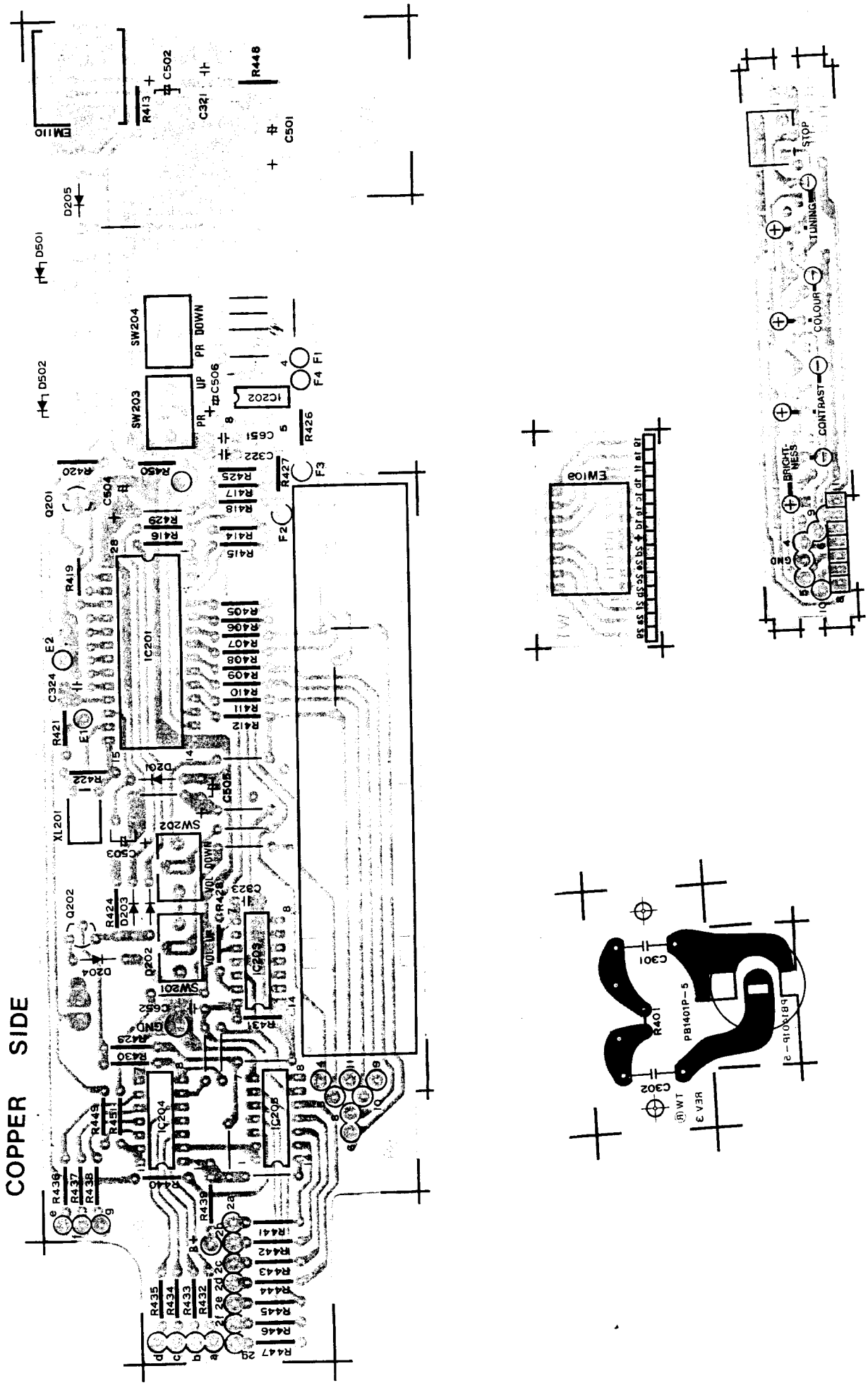
COMPONENT SIDE










COPPER SIDE
EM110
D205
D501
D502
R413
C502
C321
R448
C501
SW204
PR DOWN
SW203
UP
PR
C506
IC202
C651
C322
R426
F4 F1
F3
F2
R427
R420
Q201
C504
R450
R425
R417
R418
R429
R416
R414
R415
R419
E2
C324
IC201
R405
R406
R407
R408
R409
R410
R411
R412
R421
E1
D201
C505
R422
XL201
SW202
VOL DOWN
VOL UP
C503
R428
C323
Q202
R424
D203
D204
IC203
SW201
C652
GND
R431
R423
R430
R449
R451
IC204
IC205
R436
R437
R438
R439
R441
R442
R443
R444
R445
R446
R447
R435
R434
R433
R432
EW108
BRIGHT-NESS
CONTRAST
COLOUR
TUNING
STOP
C301
R401
PB1401P-5
C302
REV 3

PART NO.	.PART NAME	.SYMBOL
R-1	1 OHM	R102,R103
-		-
R-1.2K	1.2K OHM	R154,R155,R192,R314,R501
-		-
R-1.5K	1.5K OHM	R187,R212,R213,R243,R262 R302,R512,R513,R522,R523 R524
-		-
R-1.8K	1.8K OHM	R181,R183
-		-
R-100	100 OHM	R101,R170,R205,R206,R207 R245,R414,R415,R451,R515 R525,R526,R527,R528,R529 R530,R535,R536
-		-
R-100K	100K OHM	R431,R537,R539
-		-
R-10K	10K OHM	R197,R198,R199,R222,R234 R237,R246,R249,R253,R258 R532,R540,R542
-		-
R-15	15 OHM	R511
-		-
R-150	150 OHM	R152,R264,R305,R308,R311
-		-
R-15K	15K OHM	R220
-		-
R-1K	1K OHM	R188,R216,R217,R218,R219 R221,R239,R248,R267,R268 R401
-		-
R-1M	1M OHM	R422,R534
-		-
R-2.2K	2.2K OHM	R211,R225,R235,R261,R417 R418
-		-
R-2.7K	2.7K OHM	R238,R304,R307,R310
-		-
R-20K	20K OHM	R231
-		-

PART NO.	.PART NAME	.SYMBOL
R-220	220 OHM	R241,R242,R430,R516,R517 R518,R538,R543,R544
-		-
R-220K	220K OHM	R263
-		-
R-22K	22K OHM	R251,R424
-		-
R-27K	27K OHM	R180,R227
-		-
R-3.3K	3.3K OHM	R178,R194,R240,R423,R503
-		-
R-33	33 OHM	R228,R429
-		-
R-330	330 OHM	R162,R173,R174,R416,R432 R433,R434,R435,R436,R437 R438,R441,R442,R443,R444 R445,R446,R447,R505
-		-
R-330K	330K OHM	R177
-		-
R-33K	33K OHM	R175,R176,R195,R196,R229
-		-
R-390	390 OHM	R191
-		-
R-39K	39K OHM	R257
-		-
R-4.7K	4.7K OHM	R153,R160,R164,R165,R166 R167,R171,R312,R313,R413 R419,R450,R533
-		-
R-430	430 OHM	R440
-		-
R-47	47 OHM	R151,R186
-		-
R-470	470 OHM	R193,R301,R405,R406,R407 R408,R409,R410,R411,R412 R420,R428,R504
-		-
R-47K	47K OHM	R184,R185,R226,R233,R247 R252,R254,R255,R256
-		-

PART NO.	.PART NAME	.SYMBOL
R-5	5 OHM	R448
-		-
R-5.6K	5.6K OHM	R182
-		-
R-6.8K	6.8K OHM	R161,R200,R244
-		-
R-68	68 OHM	R439
-		-
R-680	680 OHM	R172,R214
-		-
R-68K	68K OHM	R265,R502
-		-
R-8.2K	8.2K OHM	R163,R236,R421
-		-
R-82	82 OHM	R156
-		-
R-820	820 OHM	R189,R204,R215,R303,R306 R309,R514,R519,R520,R521
-		-
R-82K	82K OHM	R179,R232,R266,R531
-		-
R-FN11J3R3	1W 3.3 OHM 5% FLAME PROOF FUSING RESISTO R	R831
R-MP-5K5R6	5W 5.6 OHM 10% CERAMIC INSULATED RESISTO R	R835
R-RDF50S10RJ	0.5W 10 ohm 5% non-flameable carbon resi stor	R701
R-RDF50S150RJ	0.5W 150 OHM 5% NON-FLAMEABLE CARBON RES ISTOR	R702,R706
R-RDF50S1K2J	1.2K OHM 0.5W NON-FLAMEABLE CARBON RESIS TOR	R705
R-RDF50S220RJ	0.5W 220 OHM 5% NON-FLAMEABLE RESISTOR	R703
-		-
R-RDF50S2K7J	0.5W 2.7K OHM NON FLAMEABLE CARBON RESIS TOR	R115,R116,R117
R-RDF50S560RJ	0.5W 560 OHM NON-FLAMEABLE CARBON RESIST OR	R704
R-RLF1/2S10K0J	0.5W 10k ohm 5% Metal Oxide Film Resisto r	R805

PART NO.	.PART NAME	.SYMBOL
R-RLF1/2S180RJ	0.5W 180 OHM METAL OXIDE FILM RESISTOR	R801,R809
R-RLF1/2S82K0J	0.5W 82K ohm metal oxide resistor	R807,R808
R-RLF1S12K0J	1W 12K OHM 5% METALL OXIDE FILM RESISTOR	R816
R-RLF1S15K0J	1W 15K OHM 5% METAL OXIDE FILM RESISTOR	R118,R119,R120
R-RLF1S15R0J	1W 15 OHM METAL OXIDE FILM RESISTOR	R810
R-RLF1S1R0J	1W 1 ohm 5% Metal Oxide Film Resistor	R812
R-RLF1S1R5J	1W 1.5 ohm 5% Metal Oxide Resistor	R806,R814
R-RLF1S5R0J	5 OHM 1W 5% METAL OXIDE FILM RESISTOR	R802
R-RLF2S10K0J	2W 10K OHM 5% METAL OXIDE FILM RESISTOR	R811,R817
R-RLF2S1K0J	2W 1K ohm Metal Oxide Film Resistor	R804
R-RLF2S3K0J	2W 3K OHM 5% METAL OXIDE FILM RESISTOR	R803
R-RN1/4K1M0G	1/4W 1 Meg ohm 2% Metal Film Resistor	R821
C-2222-366-71224	0.22uF 63V 10% metallized polyethylene film cap.	C702
C-DD05B101K500V	100pF 500V 10% (B) Ceramic Capacitor	C185
C-DD05B221K500V	500V 220PF HIGH DIELECTRIC CONSTANT	C209
C-DD104B151K50V	150pF 10% (B) CERAMIC CAPACITOR	C351,C352
C-DD104B181K50V	180pF 10% (B) CERAMIC CAPACITOR	C353
C-DD104CH120J50V	12pF (CH) 5% Ceramic Capacitor	C169
C-DD104CH150J50V	15pF 50V (CH) Ceramic Capacitor	C372
C-DD104CH180J50V	18pF 5% (CH) ceramic capacitor	C363

PART NO.	.PART NAME	.SYMBOL
C-DD104CH560J50V	56pF 5% (CH) ceramic capacitor	C192
C-DD104F102Z50V	0.001uF (F) Ceramic Capacitor	C141,C142,C145,C149,C150 C151,C174,C182,C201,C202 C203,C204,C205,C208,C367
C-DD104F403Z50V	0.04uF 10% (F) ceramic capacitor	C191
C-DD104FZ202Z50V	0.002uF 50V (FZ) Ceramic Capacitor	C181
C-DD104SL150K50V	15pF 10% (SL) ceramic capacitor	C366
C-DD104SL220K50V	22pF 10% (SL) Ceramic Capacitor	C177
C-DD104SL270K50V	27pF 10% (SL) Ceramic Capacitor	C364
C-DD104SL390K50V	39pF 10% (SL) Ceramic Capacitor	C170,C171,C172
C-DD104SL560K50V	56pF 10% (SL) Ceramic Capacitor	C101
C-DD104SL680K50V	68pF 10% (SL) Ceramic Capacitor	C158
C-DD105SL101K50V	100pF 10% (SL) Ceramic Capacitor	C207,C371
C-DD105SL121K50V	120pF 10% (SL) Ceramic Capacitor	C102
C-DD106FZ103Z50V	0.01uF 50V Ceramic Capacitor	C165,C166,C176,C206,C365 C373,C379
C-DD106SL151K50V	150pF 10% (SL) Ceramic Capacitor	C160,C175
C-DD107SL221K50V	220pF 10% (SL) Ceramic Capacitor	C362
C-DD107SL471K50V	470pF 10% (SL) ceramic capacitor	C368,C370
C-DD108FZ223Z50V	0.022uF 50V Ceramic Capacitor	C143,C144,C146,C147,C148 C152,C153,C157,C159,C173 C321,C322,C323,C361,C369 C374,C375,C376,C377,C378

PART NO.	PART NAME	SYMBOL
C-DE0807R681K1KV	1KV 680PF CAPACITOR	C821
C-DE0907B102K2KV	2KV 1000PF CERAMIC CAPACTOR	C312,C822
C-DKR1600V562J	0.0056 1.6KV 5% Metalized Polypulene Cap	C831
C-ECK-D3A102KBN	1000pF 1KV Ceramic Disc Capacitor	C802,C803,C804,C805
C-ECK-D3A222KBN	2200pF 1KV Ceramic Disc Capacitor	C811,C812,C813,C814
C-ECK-D3D471KBN	2KV 470pF (B) Ceramic Disc Capacitor	C801
C-ECK-DNS221MBX	220pF 4kV ceramic disc capacitor	C302
C-ECK-DNS471MBX	470pF 4KV Ceramic Disc Capacitor	C301
C-LHX104M250VAC	250VAC 0.1uF VDE approved Capacitor	C851
CA100-10V	Minature aluminum electrlytic capacitor	C103
CE.47-50V	E 0.47uF 50V -20C TO +85C	C408,C410,C413,C414,C417 C421
CE1-50V	E 1uF 50V -20C TO + 85C	C407,C412,C415,C446,C447 C503
CE10-160V	160V 10uF Electrolytic Capacitor	C448
CE10-16V	E 10uF 16V -20C TO + 85C	C401,C420,C423,C424,C431 C553
CE10-250V	10uF 250V -20C To 85C	C426
CE100-16V	E 100uF 16V -20C TO +85C	C403,C435,C443,C505,C558 C559
CE100-35V	100uF 35V -20C To 85C	C430
CE100-400V	E 100uF 400V -20C TO + 85C	C442

PART NO.	PART NAME	SYMBOL
CE1000-16V	E 1000uF 16V -20C TO + 85C	C402,C432,C437,C439,C501
CE1000-25V	E 1000uF 25V -20C TO + 85C	C428,C441
CE2.2-50V	E 2.2uF 50V -20C TO +85C	C419,C422,C552
CE22-16V	22uF 16V Electrolytic Capacitor	C404
CE22-50V	E 22uF 50V -22C TO + 85C	C433
CE220-16V	E 220uF 16V -20C TO + 85C	C502,C504,C554,C556
CE2200-16V	E 2200uF 16V -20C TO + 85C	C406,C438
CE4.7-160V	E 160V 4.7uF -20C To 85C	C427,C449
CE4.7-16V	E 4.7uF 16V -20C TO + 85C	C409,C418,C557
CE47-160V	E 47uF 160V -20C To + 85C	C444
CE47-16V	E 47uF 16V -20C TO + 85C	C405,C440
CE470-16V	E 470uF 16V -20C TO + 85C	C137,C416,C551,C555
CM.001-50V	0.001uF 50V Polyester Capacitor	C611
CM.0015-50V	0.0015uF 50V Polyester Capacitor	C602
CM.0022-50V	0.0022uF 50V Polyester Capacitor	C605,C706
CM.0027-50V	0.0027uF 50V Polyester Capacitor	C603
CM.01-50V	0.01uF 50V Polyester Capacitor	C601
CM.033-50V	0.033uF 50V Polyester Capacitor	C167,C168,C616
CM.047-50V	0.047uF 50V Polyester Capacitor	C703,C704
CM.068-50V	0.068uF 50V Polyester Capacitor	C604,C701

PART NO.	PART NAME	SYMBOL
CM.1-50V	0.1uF 50V Polyester Capacitor	C606,C607,C608,C609,C610 C612,C613,C614,C615,C617 C618,C652,C705
CNP1-50V	Non polar 1uF 50V general purpose capaci tor	C434
CPP-DTW200V334K	200V 0.33uF POLYPROPYLENE CAP.	C832
CT.22-50	0.22uF 50V Tetaum Capacitor	C901
D-1N4003	1A 200V RECTIFIER DIODE	D121,D122,D123,D124,D125
D-1N4148	SWITCHING DIODE	D101,D102,D111,D112,D201 D202,D203,D204,D205,D301 D302,D303,D304,D305
D-EL-1L1	Infrared emitting Diode	D103
D-FR105	1A FAST RECOVER DIODE	D151
D-LN21RCPH	HIGH BRIGHT 5MM RED LED	D501
D-MA1051-M	5.1V Zener Diode	D161
D-MA1062M	6.05 to 6.36V zener diode	D162
D-R2M	130v 1A avalanche SANKEN DIODE	D164
D-RB-156	1.2A 600V Bridge Rectifier	D131
D-RU2	1A 600V FAST RECOVER DIODE (SANKAN)	D141,D142,D143,D144,D145 D146
D-UPC574J	TEMP. CCMPENSATED ZENER DIODE	D163
Q-2SA720-R	PNP SMALL SIGNAL TRANSISTOR	Q301
Q-2SA794A	120V 1A PNP POWER TRANSISTOR (Q OR R)	Q128

PART NO.	PART NAME	SYMBOL
Q-2SC1573A-R	VIDEO DRIVE TRANSISTOR	Q123,Q130,Q131
Q-2SC1685-R	SMALL SIGNAL TRANSISTOR	Q122,Q125,Q126,Q129,Q201 Q202,Q302,Q303,Q304,Q305 Q306,Q307
Q-2SC828-R	SMALL SIGNAL TRANSISTOR	Q101
Q-2SD1541	HORIZONTAL DRIVE TRANSISTOR FOR 14" CTV	Q124
Q-8050D	MEDIUM POWER TRANSISTOR	Q308
Q-8550D	MEDIUM POWER TRANSISTOR	Q115
Q-BF370	High Power Gain Transistor	Q121
Q-BF422	video output transistor	Q112,Q113,Q114,Q127
L-CWR-100K-36	10uH Fix Inductor	L107
L-ELEBH150MA	15uH FIX INDUCTOR	L103,L106,L301
L-ELEBH1R0MA	1uH FIX INDUCTOR	L101
L-ELEBH680MA	68uH Fix Inductor	L108
L-ELEBH6R8MA	6.8uH Fix Inductor	L102
L-ELEBH8R2MA	8.2uH Fix Inductor	L104,L105
L-L1-0724	72.4uH Linearity Coil	L351
L-LS3543-12	12 ohm VDE standard 14" Degaussing Coil	L352
L-LSC-501V	220Vac 30mH line Filter	L353
T-HM-7079	8uH Tunning Inductor	T103
T-HM-7082	38.9Mhz Turning Circuit	T102

PART NO.	PART NAME	SYMBOL
T-KT-1482S	6Mhz turning circuit	T101
I-74HCT164P	8 BIT REGISTER	IC204,IC205
I-74HCT74	Dual Flip Flop	IC203
I-AN78M12	12V Voltage Requlator	IC104
I-HM6116P-4	200ns 2X8k static RAM	IC304
I-L7805CV	5V 1A REQULATOR	IC105
I-LA7830	COLOR TV VERTICAL DEFECTION OUTPUT IC	IC107
I-MAB8441P-T048	TUNNING PROCESSOR	IC201
I-MAB8441P-T049	TEXT PROCESSOR	IC301
I-PCF8582P	NVRAM	IC305
I-SAA3004P	Infra-red encoder/transmitter	IC401
I-SAA5231	VIP2	IC302
I-SAA5243PE	CCT	IC303
I-SAB3035	CITAC	IC103
I-STR5412	112V Switching Requlator IC with Insulat or Sanken	IC106
I-TDA3562A	PAL DECODER W/RGB INPUT	IC102
I-TDA4505(E)	COLOR TV SMALL SIGNAL IC	IC101
F-HW2211	39.5Mhz Color TV Saw Filter for England	FI101
F-SFE6.0MB	6MHZ CERAMIC FILTER	FI102
F-TPS6.0MB	6MHZ CERAMIC TRAP	FI103

PART NO.	PART NAME	SYMBOL
S-ESB-76912S	5A/80A250V POWER SWITCH (WITH SECONDAY 1P2T)	SW101
S-HKW0145-01-100	KEY SWITCH	SW201,SW202,SW203,SW204
S-SKHHAP	key switch 9mm (dark grey)	SW205,SW206,SW207,SW208,SW209 SW210,SW211,SW212,SW213
VS-EVL-S0AA00B23	2K OHM CARBON TRIMMER (STAND-UP)	VR114,VR115
VS-EVL-S0AA00B53	5K OHM CARBON TRIMMER (STAND-UP)	VR111,VR112,VR113
VS-EVN-D4AA00B13	1k ohm 6mm Carbon Semi Fix (Lay-Down)	VR104
VS-EVN-D4AA00B14	10K 6MM CARBON SEMI FIX (LAY-DOWM)	VR102
VS-EVN-D4AA00B52	500 OHM 6MM CARBON SEMI FIX (LAY-DOWM)	VR106
VS-EVN-D4AA00B53	5KB 6mm semi fix resistor	VR105
VS-EVN-D4AA00B54	50k ohm 6mm Carbon Semi Fix (Lay-Dowm)	VR101,VR103
VC-223-8808-11006	20pF ceramic trimmer capacitor	VC101
RC5X380-UL2468	5X380mm UL Ribon Connector (UL2468)	PC1
WC-1401-2P	2PIN WIRE CONNECTOR W/HEADER	WC1
WC-1401TX-10P	CTV1401TX 10pin wire connector w/header	WC17
WC-1401TX-2P	CTV1401TX 2pin wire connector w/header	WC4
WC-1401TX-4PA	CTV1401TX 4 pins wire connector w/header	WC7
WC-1401TX-4PB	CTV1401TX 4 pins wire connector w/header	WC12
PB1401P-3	CTV1401 (PAL) CRT SOCKET PCB. (94V0)	PB7
PB1401P-5	CTV1401 (PAL) ANT. PCB. (94V0)	PB8

PART NO.	PART NAME	SYMBOL
PB1401TX-A	CTV1401TX main board (94V0)	PB1
-		-
PB1401TX-C	CTV1401TX channel programmme board (94V0)	PB2
PB1401TX-D	CTV1401TX Display board (94V0)	PB4
-		-
PB1401TX-K	CTV1401TX control key board (94V0)	PB6
-		-
PB1401TX-R	CTV1401TX Remote board	PB5
-		-
PB1401TX-T	CTV1401TX Teletext board (94V0)	PB3
-		-
SP16-1W3-TV	3" 16 ohm 1W Repulsion Type Speaker	SP1
-		-
K-HPS0171-01-053	CRT SOCKET	SK1
-		-
K-TCS9105-01-101	75 ohm Antanna Socket	SK2
-		-
AC-BS-7SP	7 Feet BS6500 AC Cord with Stopper N 2Pi ns	EM116
AT-ETH-19Y19BY	HORIZONTAL DRIVE TRANSFORMER	EM121
-		-
AT-G4C-G2B	Hot Switching Transformer	EM118
-		-
AT-TA7024T	1.0K : 16 OHM AUDIO TRANSFORMER	EM120
-		-
AT-WEL351039B	7V 350MA BS PCB POWER TRANSFOREM	EM119
-		-
CDP30-75R-90-RCA-S	#30 75 ohm TV cable with (small RCA plu g) L=90mm	EM126,EM127
CPT-3702B22-TC	14" CPT for Europe	EM114
-		-
D-COM-D-422H	0.4" 2 digit red LED display common anod e	EM109
DL-ELT-10Z446T	600ns Luminance Delay Line W/4.43Mhz Tra p	EM112
DL-MS-19P-53A	1Hz Glass Delay Line	EM111
-		-
FB-LN0010CE	FERRITE BEAD	EM122,EM123
-		-

PART NO.	PART NAME	SYMBOL
FBT-FCK1412E05	14" Color TV Flyback Transformer	EM115
FBW1400-300	* 1400mm FLAT BRAIDED WIRE CENTER W/300m	EM124
FS3.15A-250V-S	3.15A/250V SEMKO,BS,DEMKO,VDE SLOW FUSE	EM125
HC-TB11	OPTO RECEIVER MODULE	EM110
HD-TS-80P-2P	2P HEADER	EM129
HD-TS-80P-4P	4PIN HEADER	EM128
K-MT602NB	300:75 PAL ANT ADAPTOR	EM135
PT-ERP-F5B0N180H	15A/220VAC PTC THERMISTOR	EM113
RA-U600	UHF ANT. with 300 ohm 600mm ANT. Cable	EM134
RS-CSA6.00MT	6.0Mhz Resonator	EM102
RS-CSB455E	455KHZ RESONATOR	EM101
TV-TEMB2X010A	UK turner with 256 prescaler	EM108
XL13.875MHZ	13.875Mhz crytal	EM107
XL4.000MHZ	4.0Mhz crystal	EM103,EM104,EM105
XL8.867238MHZ	8.867238Mhz Crytal	EM106
JW18-0-160	#18 160mm Black Wire	JW1
JW20-0-420	#20 420mm BLACK WIRE CPT SOCKET PCB. TO	JW2
JW22-0-100	#22 100mm BLACK WIRE (FOR KEYBOARD GRO	JW36
JW22-1-120	#22 120mm brown wire	JW7
JW22-2-120	#22 120MM RED WIRE	JW34

PART NO.	PART NAME	SYMBOL
JW22-4-120	#22 120mm yellow wire	JW35
JW22-4-240	#22 240mm yellow wire	JW11
JW22-6-220	#22 220mm blue wire	JW9
JW22-7-220	#22 220mm purple wire	JW8
JW22-9-220	#22 220mm white wire	JW10
JW24-2-420	#24 420mm Red Wire	JW4
JW24-4-420	#24 420mm Yellow Wire	JW3
JW26-0-50	#26 50MM BLACK WIRE	JW6
JW26-0-60	#26 60MM BLACK WIRE	JW42
JW26-0-70	#26 70MM BROWN WIRE	JW33
JW26-1-160	#26 160MM BROWN WIRE	JW14
JW26-1-180	#26 180MM BROWN WIRE	JW13
JW26-1-70	#26 70MM BROWN WIRE	JW27
JW26-2-160	#26 160MM RED WIRE	JW12
JW26-2-40	#26 40mm red wire	JW41
JW26-2-70	#26 70MM RED WIRE	JW28
JW26-3-160	#26 160MM ORANGE WIRE	JW16
JW26-3-180	#26 180mm ORANGE WIRE (FOR 1ST DIGIT DI	JW15
JW26-3-70	#26 70MM ORANGE WIRE	JW29
JW26-4-160	#26 160MM YELLOW WIRE	JW18

PART NO.	PART NAME	SYMBOL
JW26-4-180	#26 180mm YELLOW WIRE (FOR 1ST DIGIT DI	JW17
JW26-4-70	#26 70MM YELLOW WIRE	JW30
JW26-6-160	#26 160MM BLUE WIRE	JW22
JW26-6-180	#26 180MM BLUE WIRE	JW21
JW26-6-70	#26 70MMM BLUE WIRE	JW31
JW26-7-160	#26 160MM PURPLE WIRE	JW24
JW26-7-180	#26 180mm PURPLE WIRE (FOR 1ST DIGIT DI	JW23
JW26-7-70	#26 70MM PURPLE WIRE	JW32
JW26-8-160	#26 160MM GREY WIRE	JW26
JW26-8-180	#26 180MM GREY WIRE	JW25
JW26-9-160	#26 160MM WHITE WIRE	JW20
JW26-9-180	#26 180MM WHITE WIRE	JW19
JWD22-9-240	#22 240mm White Double Insulation Wire	JW5
BW0.5X60	BARE WIRE 0.5 X 60MM	AX9
BW0.6X10	BARE WIRE 0.6X10mm	AX4
BW0.6X12.5	BARE WIRE 0.6X12.5mm	AX5
BW0.6X15	BARE WIRE 0.6X15mm	AX6
BW0.6X17.5	BARE WIRE 0.6X17.5mm	AX7
ELC2X4.5	2 X 4.5MM EYELET	AX1
HEAT-SINK-COMPOUND	HEAT SINK COMPOUND	AX8

PART NO.	PART NAME	SYMBOL
SS-DS8432	4" Cable Tie UL Recongnize	AX2,AX18
-		-
SS-ULT-03	3MM UL TUBE	AX10,AX16,AX17
-		-
SS-ULT-04	UL TUBE DIA=4MM	AX11,AX12
-		-
SS-ULT-06	6mm UL Tube	AX14,AX15
-		-
ST-136-1401	Test Pin	AX3
-		-

VOLTAGE TABLE FOR IC

SYMBOL	IC:101 TDA 4505E	IC:102 TDA 3562A	IC:103 SAB 3035	IC:104 L7812CV	IC:105 L7805CV	IC:106 STR 5412	IC:107 LA7830
PIN NO.							
1	4.00	11.52	2.35	15.22	6.24	286	GND
2	2.37	2.72	10.38	GND	GND	119.61	12.57
3	0.93	5.15	5.51	12.22	5.01	GND	24.85
4	3.10	2.71	5.50			119.32	0.09
5	4.34	1.66	3.45			7.15	0.70
6	GND	3.29	2.95				24.81
7	10.96	1.21	0.02				1.21
8	3.44	2.14	0.02				
9	3.44	0.02	0.01				
10	3.40	7.33	9.50				
11	0.92	2.72	6.11				
12	2.51	3.07	6.10				
13	2.84	5.73	1.88				
14	1.44	3.06	GND				
15	2.16	5.70	24.07				
16	GND	2.98	11.53				
17	4.04	5.71	31.60				
18	6.06	2.77	11.53				
19	4.65	2.86	0.01				
20	6.97	7.40	0.01				
21	6.97	7.33	0.01				
22	9.50	2.19	11.53				
23	2.69	2.19	2.70				
24	2.58	10.09	1.81				
25	4.56	10.12	10.27				
26	0.39	2.72	5.61				
27	0.76	GND	10.54				
28	3.09	7.37	10.60				

NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : MAXIMUM POSITION
BRIGHTNESS : CENTER POSITION
COLOUR : CENTER POSITION
SIGNAL INPUT : 80 dBuV
CHANNEL SETTING: THE LAST CHANNEL OF UHF HIGH

VOLTAGE TABLE FOR IC

SYMBOL	IC301 6441P 1049	IC302 SAA5231	IC303 SAA 5243PE	IC304 HM 6116P-4
PIN NO.				
1	GND	10.41	4.88	0.93
2	3.8	2.16	0.65	0.83
3	3.8	2.66	0.64	3.22
4	GND	5.94	2.51	1.01
5	GND	3.80	4.02	0.89
6	GND	2.74	1.37	2.78
7	GND	9.28	4.98	2.78
8	GND	5.37	2.00	2.79
9	GND	2.85	6.42	0.11
10	4.81	4.77	0.84	0.22
11	0.03	1.05	3.00	0.20
12	2.34	11.50	8.26	GND
13	GND	GND	0.47	0.14
14	GND	4.28	0.46	0.03
15	1.37	3.88	0.46	4.84
16	1.11	11.50	0.29	0.04
17	0.02	6.42	0.29	0.03
18	4.82	6.52	0.06	GND
19	4.83	4.83	3.00	0.69
20	4.83	1.23	3.00	2.81
21	GND	4.65	GND	4.02
22	GND	3.08	0.11	3.14
23	GND	1.66	0.22	3.39
24	GND	0.93	0.20	4.88
25	GND	0.64	0.14	
26	GND	4.26	0.03	
27	GND	4.62	4.54	
28	4.89	8.26	0.04	
29			0.03	
30			2.79	
31			2.78	
32			2.78	
33			0.89	
34			1.01	
35			3.22	
36			0.83	
37			0.93	
38			3.39	
39			3.14	
40			0.63	

VOLTAGE TABLE FOR IC

SYMBOL	IC201 T048	IC202 PCF 8582P	IC203 74HCT74	IC204 74HCT 164P	IC205 74HCT 164P
PIN NO.					
1	0.08	GND	4.94	0.01	4.99
2	3.45	GND	2.60	0.01	4.99
3	2.90	GND	4.99	4.99	4.99
4	4.73	GND	4.99	4.99	4.99
5	4.75	3.29	0.01	4.99	4.99
6	4.76	3.28	4.99	4.99	4.99
7	4.81	4.98	GND	GND	GND
8	4.79	4.96	0.01	4.99	4.99
9	4.83		4.99	4.94	4.94
10	4.91		0.14	4.99	4.99
11	4.91		0.18	4.99	4.99
12	4.97		0	4.99	4.99
13	4.65		0.19	4.99	4.99
14	GND		4.99	4.99	4.99
15	1.39				
16	1.28				
17	0.02				
18	0.02				
19	4.99				
20	4.99				
21	0.01				
22	4.95				
23	4.95				
24	4.96				
25	0.01				
26	0.07				
27	4.97				
28	4.99				
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

VOLTAGE TABLE FOR TRANSISTOR

PART NO.	SYMBOL	BASE	COLLECTOR	EMITTER
2SC828	Q101	0.01	5.28	0
BF422	Q112	4.92	113.25	4.53
BF422	Q113	4.94	109.78	4.54
BF422	Q114	5.08	105.03	4.68
B550	Q115	2.38	GND	2.82
BF370	Q121	2.18	11.33	1.47
2SC1685	Q122	3.28	11.52	2.63
2SC1573A	Q123	0.36	74.29	GND
2SD1641	Q124	-0.06	119.15	0
2SC1685	Q125	0.01	2.83	GND
2SC1685	Q126	0.65	0	GND
BF422	Q127	0	119.02	GND
2SA794A	Q128	119.15	119.39	119.68
2SC1685	Q129	1.42	4.89	0.77
2SC1573A	Q130	11.29	118.19	50.69
2SC1573A	Q131	0.58	51.87	GND
2SC1685	Q201	0.01	4.96	GND
2SC1685	Q202	0.68	4.98	0.28
2SA720	Q301	3.93	2.32	4.27
2SC1685	Q302	0.54	4.87	0.01
2SC1685	Q303	0.66	4.87	0.26
2SC1685	Q304	0.88	4.87	0.26
2SC1685	Q305	0.89	4.87	2.46
2SC1685	Q306	0.03	9.48	GND
2SC1685	Q307	0.03	1.78	GND
B050	Q308	5.74	4.96	4.87